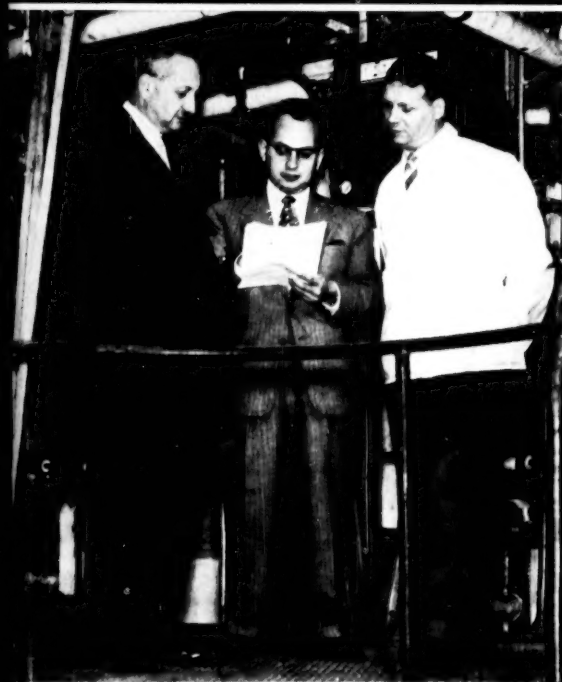
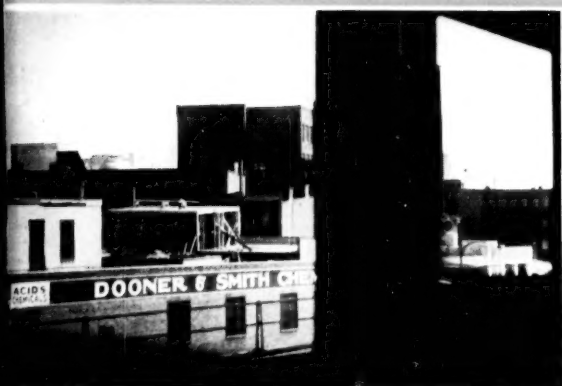


Chemical Week

August 7, 1954

Price 35 cents



► Through the window glass—CW Camera spots bustling chemical plants on N.Y.-Phila. run . . p. 30

They're salesmen for safety; here's what they do, how they make out p. 42

► U. S.-Belgian trio builds plant-scale research unit to speed antibiotic probes p. 54

Carpets cushion chemical markets as rug makers switch more production lines to rayon . . p. 77

Competition pins a premium on market research; that's why the field is growing p. 84

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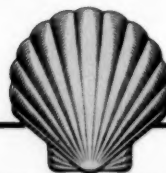
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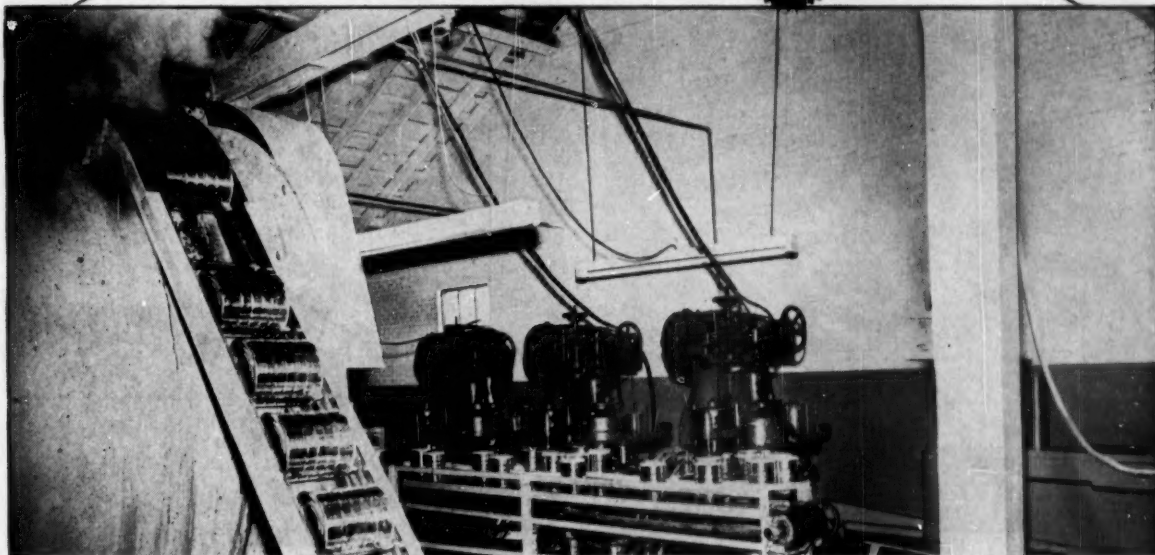
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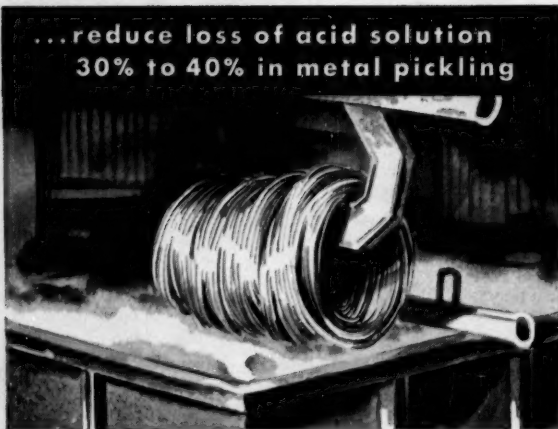
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Chemical Week—

Volume 75

August 7, 1954

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August 7, 1954 • Chemical Week

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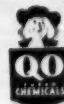
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Post yourself on FA. Write for Bulletin 205, describing its chemistry and use. Ask for experimental quantities and other technical co-operation as needed.

*Reg. U. S. Pat. Off.

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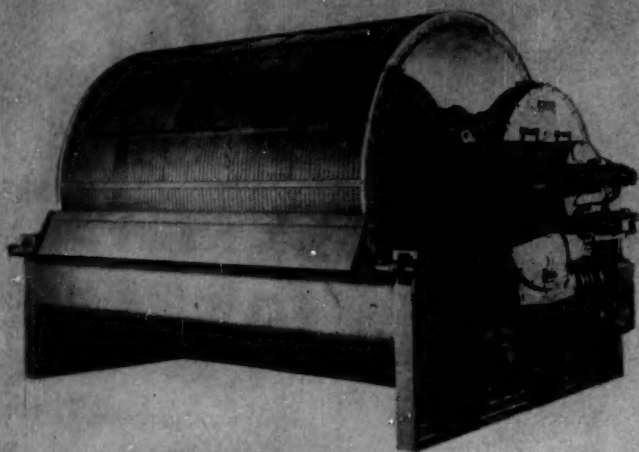
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OPINION

Tin Trade

TO THE EDITOR: In your comment upon the International Tin Agreement (July 10) the statement is made that "the Dept. of Commerce considers it a tin cartel."

Asst. Secy. of Commerce Samuel W. Anderson has informed me by letter that his department has *not* characterized the International Tin Agreement as a cartel.

Any imputation that the Tin Agreement is a cartel has no foundation in fact and is deliberately misleading. The Agreement cannot operate without continuing approval by a majority of the participating governments of the tin-consuming countries. . . .

LYNN W. MEEKINS
Director

The Malayan Tin Bureau
Washington, D.C.

Perhaps we used a word that is burdened with some ambiguity and carries an unfortunate connotation. It is, of course, perfectly true that the Dept. of Commerce has never characterized the Agreement as a cartel, although anyone might properly do so if he meant "a written agreement between nations," which is one definition of the word. However, the term has been freely used by officials of the Depts. of Commerce, State, and Interior in discussions with our reporters.
—ED.

Taxpayers vs Foundations

TO THE EDITOR: I have just read the interesting article "Quiet Boom in Association Research" (July 10) . . .

In the fourth paragraph it is suggested that the reason [many more] associations will not establish [their own] laboratories is that they are placing [instead] more reliance on non-profit scientific research foundations. To a certain extent I believe this is true; however, I do not believe this is the complete story and it may be somewhat misleading.

It is surprising that the article did not mention the trade associations that utilize services of the independent tax-

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to:
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Moisture Content: 1.0% max.
Freezing Point: 97.0°C. min., dry basis

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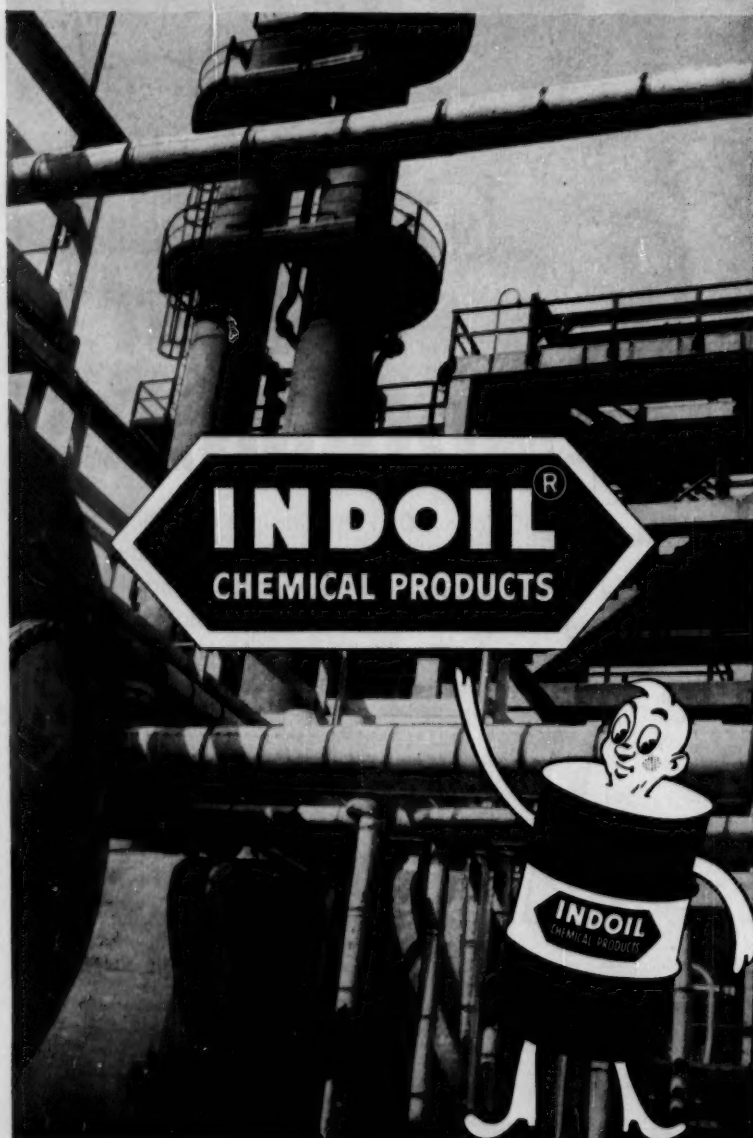
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OPINION

paying research laboratories. If you will refer to the membership list of the American Council of Independent Laboratories, you will find a large number of these independent laboratories whose facilities and technical staff are in position to provide excellent research and consultation services for a wide variety of industries.

Generally speaking, the members of all trade associations are in some type of independent, profit-making, tax-paying business. These businesses strongly oppose any type of government-sponsored or tax-exempt competition. Therefore, it is only logical that these same businesses would give consideration to the independent, tax-paying research organization when this matter is called to their attention . . .

I sincerely hope that you . . . will take this matter into consideration in future articles and at least give equal credit to the individual tax-paying research organizations as compared with the . . . so-called nonprofit, tax-exempt research foundations . . .

I also want to take this occasion to compliment you on the excellence of your publication. It is most informative and is one of the few magazines that our staff reads in detail. . . .

LEWIS E. HARRIS
Director
Harris Laboratories
Lincoln, Neb.

We are, as Reader Harris suggests, both right. Most of the gain in association research—as we said—is attributable to increased reliance on independent research institutes. However, many trade associations are also utilizing the services of commercial organizations, but, in the main, for testing and consultation.—Ed.

DATES AHEAD

American Pharmaceutical Assn., annual meeting, Statler hotel, Boston, Aug. 22-27.

World Congress on Surface Active Agents, Sorbonne, Paris, France, Aug. 30-Sept. 3.

National Agricultural Chemicals Assn., annual meeting, Essex and Sussex hotel, Spring Lake, N.J., Sept. 8-10.

International Congress of Industrial Chemistry, Brussels, Belgium, Sept. 11-19.

American Chemical Society, national meeting, Statler hotel, New York, Sept. 12-17.

Federal Wholesale Druggists' Assn., annual convention, Greenbrier hotel, White Sulphur Springs, W.Va., Sept. 19-22.

Chemical Market Research, Assn., fall resort meeting, Equinox House, Manchester, Vt., Sept. 20-21.



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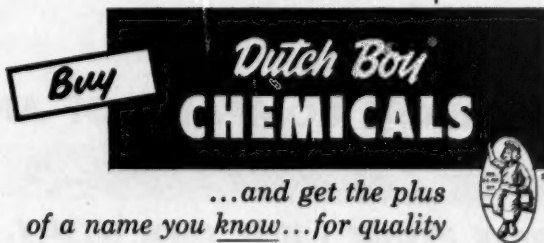


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Chemical Week • August 7, 1954

NEWSLETTER

You can look for the government to pull more and more out of chemical production. Secretary of Interior McKay approves recommendations, made by a survey team on reorganization of the U. S. Bureau of Mines, that the government get out of titanium and zirconium manufacture (see p. 15).

Helium facilities—the government owns all of them (CW, Nov. 28, '53, p. 77)—were also slated for sale or lease to private industry, but Interior pulled a switch after congressmen, Republicans and Democrats alike, stirred up a storm of protest. Asst. Secretary of Interior Felix Wormser wired superintendents of all four plants that the department had decided not to accept the survey team's recommendation to dispose of the helium plants.

But it's a different story on tin smelting. Congress decided—after much urging from Sen. Lyndon Johnson (D., Tex.)—to continue operation for another year of the government-owned smelter at Texas City (CW Newsletter, June 5).

Now Johnson and his House colleague, Rep. Clark Thompson (D., Tex.) have won another round in their fight for indefinitely prolonged operation of the unit: the House Rules Committee has approved their resolution to set up a joint Senate-House tin committee to investigate the desirability of a permanent domestic tin smelting industry and report their findings to Congress next January.

Another hurdle has been cleared on the road to a \$700-million hydroelectric and metallurgical development in northern British Columbia. Formal application for a conditional water license was presented last week to the provincial government by Frobisher Ltd.

If both the provincial and federal governments approve, the initial step will begin next year with diversion of the Yukon and Alsek rivers to provide 660,000 kw. of electric power at the start, and 3,750,000 kw. eventually.

Ultimate objectives: treatment of cobalt-nickel ores from Pacific islands; electrolytic smelting of Pacific Coast iron ores; production of ferromanganese from Southwest African ores; treatment of zinc and other concentrates from British Columbia.

Company officials foresee an industrial city of 12-15,000 population on Taku Inlet, site of the projected refineries.

These plans attest to the growing strength of Canada's chemical process industries. Figures for 1953, disclosed last week, show that value of chemical and allied production climbed 6.4% to \$848 million. That's over five times the 1939 figure and more than double 1946's.

Largest gain last year was in primary plastics, followed by heavy chemicals, coal-tar intermediates, and specialties. The only category registering a loss was vegetable oils.

And Canada continues to be a good customer for U. S. chemicals. Imports from the States rose 16% to \$192 million, accounted for 87% of total chemical import—but significantly, imports from the United Kingdom jumped a fat 50%, and from other countries, 24%.

No sooner did Allied Chemical get its Omaha ammonia-urea plant onstream (see Market Letter, p. 74) than it disclosed plans to double its present capacity to 120,000 tons/years of nitrogen products.

Only thing holding up the additional construction is Federal Power Commission's approval of Northern Natural Gas Co.'s application (CW Newsletter, May 15) to supply more gas to Allied. Northern Natural Gas foresees no difficulties, however, in getting the approval.

Allied, incidentally, is also expanding its Hopewell, Va., and South Point, O., nitrogen plants by 57,400 tons/year.

Another doubling—this time of chlorine-caustic—will be undertaken by General Aniline & Film at Linden, N. J. The original plans called for 26 tons/day of chlorine, but even before construction began GAF upped its goal to 50 tons/day. Products of the \$5-million plant, to be in operation a year from this fall, are for captive use.

The fight for GAF ownership, incidentally, goes on and on. Now Interhandel, the Swiss holding company that owns 93% of GAF stock, has filed a brief in the U. S. Court of Appeals, Washington. For reversal of a lower court decision dismissing its suit to recover ownership from the Office of Alien Property. It's expected that Interhandel's case will be argued before the Court of Appeals this fall.

But as ammonia and chlorine move forward, chlorophyll, apparently, slips backwards: one firm that put most of its chips on the magic green ingredient is now in financial straits, may be bought out by a large drug firm if current negotiations prove fruitful.

Jefferson Lake Sulphur may still not get its \$897,000 (CW Newsletter, June 19). The Louisiana legislature passed a bill authorizing payment for a judgment obtained against the state by the company six years ago, but now an attorney acting for a former state representative is filing suit to enjoin the state treasurer from paying the money. Technicalities are alleged that make the act unconstitutional.

Victims of the Texas City ammonium nitrate explosion back in April, '47, may have an easier time collecting their damages. The House bill to compensate the victims (CW Newsletter, July 31) was passed by voice vote last week, is expected to meet no opposition in the Senate.

One amendment was added, limiting the relief to claims filed against the government before April 25, '47—nine days after the explosion—except in special instances agreeable to the Secretary of the Army.

Of industrial interest are these highlights from the Atomic Energy Commission's semiannual report, made public last week:

- Tests indicate the practicability of the boiling water reactor, a relatively economical type suitable for power generation.
- A second, larger-scale experimental breeder reactor will be built, incorporating many features of a full-scale power plant.
- A flexible, rugged thermocouple was developed for locations that are inaccessible to current devices. Assemblies only 0.04 in. in diameter and 20 ft. long were used for temperatures up to 1250 F.
- A portable, 10-lb. X-ray unit uses radioactive thulium.
- Safety of atomic work is enhanced by new knowledge of neutron and gamma ray effects on experimental animals.
- The AEC and the Army will develop a "package" power plant.

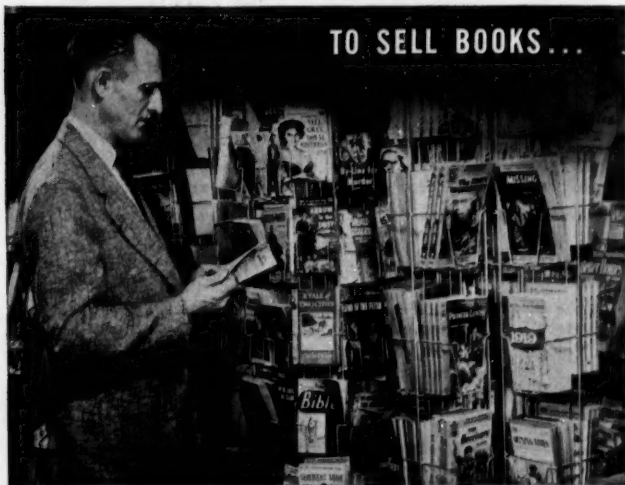
... The Editors

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August 7, 1954 • Chemical Week

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tight rust-resisting coating is applied over a surface that's been completely cleaned. They're sturdy because they're made of high-grade USS Steel. USS Steel Drums are better for you . . . better for your customers.

• United States Steel Products fabricates stainless, galvanized, tinned, painted and decorated drums and pails. Furnished in a wide range of capacities with a variety of fittings and openings to fit your particular requirements.

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USS STEEL DRUMS

UNITED STATES STEEL

BUSINESS & INDUSTRY . . .

CHEMICAL COMPANY EARNINGS

(in dollars; 000 omitted)

	SALES			PRETAX EARNINGS			NET EARNINGS AFTER TAXES		
	1954 First Half	1953 First Half	% Change	1954 First Half	1953 First Half	% Change	1954 First Half	1953 First Half	% Change
Allied Chem. & Dye	271,756	271,661	+ .03	44,357	46,549	-4.7	22,695	21,719	+4.5
American Cyanamid	196,083	197,533	-0.7	26,263	32,579	-19.4	13,263	16,979	-21.9
Atlas Powder	28,841	29,366	-2.8	2,564	3,033	-15.5	1,231	1,156	+6.5
Blockson Chemical	14,982	13,823	+8.4	4,263	4,312	-1.1	2,023	1,527	+32.5
Colgate-Palmolive*	131,804	134,200	-1.8				3,451	3,564	-3.2
Commercial Solvents	23,769	21,919	+8.4	2,549	2,046	+24.5	1,259	1,023	+23.1
Diamond Alkali	47,059	43,440	+8.3	6,359	5,912	+7.6	3,115	3,140	-0.8
Dow Chemical	215,557	225,441	-4.4	23,721	39,420	-39.8	16,661	18,633	-10.6
Du Pont	821,000	894,000	-8.2	284,780	347,458	-18.0	152,150	114,758	+32.6
Eastman Kodak	131,900	133,800	-1.4	26,900	31,300	-14.1	12,300	9,900	+24.2
Freeport Sulphur		22,596		6,182	5,063	+22.3	4,774	4,110	+16.1
Hercules Powder	92,149	99,969	-7.8	15,213	20,260	-24.9	7,151	6,754	+5.7
Heyden Chemical	8,672	12,747	-31.9	960	1,742	-45.0	512	784	-34.7
Hooker Electrochemical	22,225	19,111	+16.3				2,072	1,727	+20.0
Merck	73,678	82,543	-10.7	13,335	13,368	-0.2	6,335	6,209	+2.0
Mathieson	134,939	123,688	+9.1	17,089	18,245	-6.3	9,226	9,211	+0.2
Monsanto	170,110	175,044	-2.8	21,735	31,553	-31.1	11,435	13,504	-15.3
Nopco	10,564	10,243	+3.1	1,306	1,493	-12.5	634	494	+28.3
Pennsalt	15,727	15,666	+0.4	1,973	2,115	-6.7	1,026	955	+7.4
Chas. Pfizer	72,549	59,894	+21.1	13,345	14,828	-10.0	7,333	7,617	-3.7
Rohm & Haas	66,090	61,977	+6.6	13,938	11,757	+18.5	6,089	3,383	+80.0
Texas Gulf Sulphur	40,067	39,368	+1.8	22,176	21,331	+4.0	15,516	12,940	+19.9
Union Carbide and Carbon	435,157	528,155	-17.6	78,924	130,231	-39.4	41,803	52,479	-20.0
Victor	22,347	21,219	+5.3	3,812	3,670	-1.5	1,954	1,632	+19.7

* Domestic sales, net profits only.

(1) Fiscal year ends May 31.

(2) Pretax Earnings and Net Income include income from General Motors.

Tax Cut Compensates Sales Loss

Mixed returns for the first half of 1954 in both sales and net profits would seem to indicate that true to general prediction, the chemical industry is well back on the road to "normalcy"—whatever that is. Sales are off, compared with 1953 record highs; but sharply decreased taxes have bolstered net profits virtually straight across the board.

Typical of the way semiannual reports read this summer is that of Du Pont. Record earnings are charted for the six months ending June 30, despite a heavy decline in sales. Credited: the expiration of excess profits taxes. And backing the theory that even better things lie ahead, company officials are openly looking for the best earnings year in the company's history.

Steaming Ahead: A good number of other companies had even happier

reports on the state of business in the chemical industry today. Diamond Alkali sales climbed to a peak despite inroads by start-up expenses in new facilities, heavier amortization charges, and higher labor tolls. Hooker, despite corresponding and unusually heavy start-of-operations costs at Montague, Mich., had a similar happy tale to tell. Net sales jumped from \$19.1 million to \$22.2 million; net income climbed from \$1.7 million to \$2 million.

Mathieson Chemical saw sales jump \$11 million—from \$123.6 to \$134.9. Cost of sales, overhead and other expenses rose perceptibly—but declining taxes allowed for an over-all profit rise of 0.2%. Olin Industries—the company with which Mathieson merged last June—didn't fare as well saleswise, but from a profits angle, it far exceeded its partner (sales, \$97.9

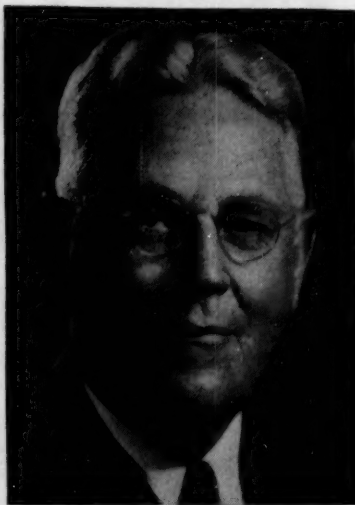
million; profits, \$7.7 million). Result: a combined *pro forma* statement for the combined company shows sales off \$7 million—to \$232 million—but net profits up \$1 million—to \$16.9 million.

Coming Back Slower: Sales of Union Carbide, however, dropped so precipitously (17%) during the first half of 1954 that decreased taxes weren't able to recoup net profits. Blamed for the bulk of the sales drop: a lower volume of alloy sales—about 36% below a year ago due to curtailed operations in the steel industry. But Carbide executives—while conceding that the volume of sales during July and August will probably be affected by vacation shutdowns throughout industry—look for substantially increased demand by September.

Consensus: pleasant sailing ahead.



GRACE: Gets further diversification into chemicals.



DEWEY: Secures financial backing for expansion.

Another String to Its Bow

Financial writers are quick to jump at the chance to write about forthcoming mergers. News and the gossip of possible alliances are snapped up quickly, become feature stories in newspapers and magazine articles. But every now and again an obvious one slips by.

That was the case, in large part, with last week's merger of W. R. Grace & Co. and Dewey and Almy Chemical Co. Everyone knew about the five-year, 3½% notes Dewey and Almy had sold to Grace to gain cash for working capital and expansion. And further, it was common knowledge that the loan had a convertible feature whereby Grace could cash its notes any time after 1954 into Dewey and Almy stock, or the Cambridge concern could request the transfer. But few stopped to remember.

Result: when the word about the merger plans broke (*CW Newsletter*, July 31), there was a scramble to recoup old material. Chagrined Wall Streeters muttered, "and there it was in front of us all the time."

Running True to Form: Actually the prospect of merger was even more apparent in view of Grace's recent chemical activities. Since Sept. '52, when it floated its big \$35-million loan from insurance companies to form Grace Chemical Co., the company has been dead set on a major invasion of the chemical field. Negotiations with Dewey and Almy were followed by gradual purchase of large chunks of Davison Chemical stock, outright purchase of Thurston Chem-

ical Co. on an exchange-of-stock basis. In all, \$45 million was tossed into investment in chemical properties—putting Grace, in total assets, among the 10 largest chemical companies in the U.S. And the whole maneuver, observers note, was handled with the blessing of W. R. Grace stockholders—who had voted 600,000 shares of new common stock last September for the specific purpose of luring other chemical firms into the Grace fold.

But the Dewey and Almy move may have other implications, too. Grace is an old, well-established firm led by a third-generation president, J. Peter Grace, Jr., who's determined to leave his mark on company progress. Its activities are already incredibly many sided; management has plenty of money (according to the 1953 balance sheet, \$60 million in cash and government securities) to strike out even further. In Central and South America, Grace produces sugar, makes paper from sugar-cane residue, has a sizable textile business, runs a chocolate factory. And of course it runs Grace Lines, too, runs a New York bank and an insurance brokerage business, sells outdoor advertising on the West Coast, and distributes agricultural machinery.

Thus, with a solid background of adding strings to its bow, it's highly credible that the Dewey and Almy purchase may, in effect, be the start of a new round of acquisitions—away from fertilizers (where most of its late emphasis has been) and into specialty chemicals.

Certainly, if management needs any justification of its penchant for acquisition, it can point to the fact that it has been thriving. In 1953, when 47% of its domestic gross assets were represented by chemical and fertilizer sales, the company's total sales were \$296 million; net profits after taxes, almost \$11 million. Perhaps of even greater note: Grace registered a 36% rise in operating income last year—caused by improved profit margins.

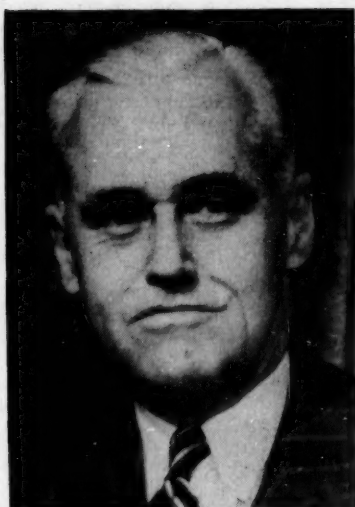
Picking Up Lately: Dewey and Almy, on the other hand, has in recent years been hampered by an unsettled profits picture. Far less diversified than Grace (and much smaller) its sales have more than doubled since 1949, but net profits after taxes have fluctuated widely. Last year, profits read \$1.6 million—the best since 1950's top figure of \$1.9 million.

"That, as much as anything else, was the reason behind the Grace loan," points out one financial observer. Dewey and Almy stock was as low as \$14 in 1953; the outlook was anything but promising. "It simply needed funds to get going, and Grace was right on hand with the ready cash."

Result: for the first quarter of this year, Dewey and Almy sales were up, profits much improved. Whereas in the corresponding quarter in 1953 management had only managed to convert 4.6% of its sales dollar into profits, it turned in a tidy 11% of sales into net this year. Result: net income soared from \$145,000 to \$439,000.

A Brain Teaser: That Grace was confident of the future of Dewey and Almy is seen in the particularly unusual feature of the loan agreement. Conversion could have taken place at the option of either Grace or the specialty company. Any time after Feb. 1, '54, Dewey and Almy could conceivably have forced conversion of the notes into stock at a time when its own stock was way below conversion value. But it didn't. Why, ask puzzled economists, unless it, too, felt confident that Grace was too occupied with its fertilizer ventures to bother much about additional chemical diversification at the moment?

Perhaps the true reason behind the move will never be completely revealed. But that Grace stands poised on a round of fresh new chemical diversification is a virtual certainty. Steeped in a tradition of action-by-storm, company executives can be counted on to study new possibilities, then make their assault into still another chemical sector.



PROVIDENCE JOURNAL-BULLETIN

JUDGE DAY: After nearly eight years, an end to twin antitrust suits.

Know-how For Free

Scheduled to go on the "gratis" list this week—as a result of the consent decree settling two antitrust suits against Wallace & Tiernan and affiliated companies—are more than a score of patents and trademarks relating to chlorinating equipment. These were the civil and criminal antitrust suits filed in U. S. District Court at Providence, R.I., in Nov. '46, charging the companies with having monopolized the manufacture and sale of such equipment through patent acquisitions, infringement suits, buying out competitors, and exclusive dealing arrangements.

The settlement signed last week by Judge Edward Day cancels all such agreements, orders the companies to: make 21 equipment patents available to competitors on a royalty-free basis; dedicate to the public three trademarks; pay fines totaling \$45,000.

Conflict on Cutbacks

A fight is in the making this week over proposals for the U.S. government to get out of a string of chemical and metallurgical operations still nestled under the wing of the Interior Dept.'s Bureau of Mines.

Advocating this move is Secretary of the Interior Douglas McKay, who has endorsed an industry survey team's recommendation that certain enterprises be transferred to private ownership and management. In opposition are various Congressional groups headed by Senators Guy Cordon (R., Ore.) and James Murray (D., Mont.),

ranking members of the Senate Interior Committee.

He won't sell the four government-owned plants—in Texas, New Mexico and Kansas—which are the world's only commercial producers of helium. Helium has been a government monopoly since 1925. Last year's production was 152 million cu. ft.; this year's total may hit 200 million. About 90% of production has been going to the government; civilian consumers are paying a base rate of about \$13.50/1,000 cu. ft.

But McKay does have in mind:

- Ending zirconium output at the government plant in Albany, Ore., as soon as private industry can meet the demand.
- Halting titanium production as soon as possible at the Boulder City, Nev., plant—very small compared with new private plants now going up.
- Stopping operations of the oil shale demonstration plant at Rifle, Colo.
- Curtailing research work on synthetic liquid fuels from coal and lignite.

'Bloody but Unbowed'

Every man is entitled to his day in court, and that time has come for two manufacturers of chemical-process items that—according to charges filed by Federal Trade Commission lawyers—don't live up to the companies' advertising claims.

In separate hearings before FTC examiners, the makers of battery additive AD-X2 and Evis water conditioners are about to have their

chances to defend their use of statements that have been called "false" and "misleading." The AD-X2 hearing began last week in Washington, was expected to move to Boston and New York later on. Proceedings against Evis, which started last May on the West Coast, will resume next week with testimony to be taken Aug. 12 in Cleveland and Aug. 16 in Washington. In both cases, the prosecutors plan to finish presenting their evidence within a few weeks, letting the defendants take their turn on the stand in the weeks—or months—to follow.

Evis' defense is expected to run along the line that claims were based on the water conditioners' performance in actual factory operations, not on laboratory tests. Witnesses for the government have said they could find no difference between "treated" and untreated water.

First government witness in the AD-X2 case was Walter Haner, chief of the Bureau of Standards' electrochemistry section. He testified that five series of tests in 1952-53 led to the conclusion that the additive "neither helped nor hurt" test batteries. In a 38-page blast at FTC as the hearing started, AD-X2 maker Jess Ritchie demanded that the agency also investigate advertising claims for gasoline additives, closed with the quote: "My head is bloody but unbowed."

Pity for Scientists

Behind closed doors, a Congressional subcommittee has been sifting complaints that the Armed Services are hampering scientific research by their handling of professional scientists. This week, the probers are airing their findings and recommendations—along with a threat that Congress might turn research over to civilians if the military doesn't mend its ways.

This Military Operations subcommittee headed by Rep. R. Walter Riehlman (R., N.Y.)—after taking 1,500 pages of testimony—rapped the "apparent self-satisfaction" on the part of Pentagon chiefs that turnover among their scientists is no higher than in private industry.

In contrast, Riehlman's committee feels that key scientists are being lost because of (1) nonsupport for basic research, (2) disregard for scientific advice, (3) unintelligent administration of secrecy regulations, and (4) poor handling of security-risk investigations and hearings.

To improve personnel handling and thereby strengthen research work for defense, the congressmen recommend:



BATTERYMAN RITCHIE: With long blast at FTC, he launches own defense.

BUSINESS & INDUSTRY

• That a program of basic research be started, to be financed directly by the Office of the Secretary of Defense. This program would include projects not directly applicable to immediate needs, and should supplement the work of the National Science Foundation.

• That the government contract out much of the work now being done in its own laboratories. In addition, no "in house" research should be carried on just to train military officers.

• That if military officers don't show they're willing to give civilian scientists a greater voice in top policy councils, Congress might consider setting up a civilian agency comparable to the World War II Office of Scientific Research & Development, with responsibility for defense research.

COMPANIES

New Incorporation: The Potash Import & Chemical Corp., New York, has been established to import muriate and sulfate of potash into eastern United States ports from West Germany.

• **Seven uranium stock firms** have been charged with soliciting and selling stock without registration under Illinois security law. Four of the companies (Colorado Uranium Mines, Inc., Three States Uranium Co., Paradix Uranium Co., and Consolidated Uranium Corp.) appeared and were granted extensions on hearings. The other three (Calumet Uranium Mines, Ltd., Calumet Contact Uranium Mines, Ltd., and Lisbon Valley Uranium Co.) failed to appear, hence defaulted and are subject to an order by Secy. of State Carpentier banning future operations in the state of Illinois.

• **In a move designed to further consolidate its holdings of lithium ore properties in North America,** Lithium Corp of America, Inc. has acquired 100% interest in the Cat Lake, Manitoba, Canada, properties formerly owned by Northern Chemicals, Ltd. At present there are no mining or recovery activities in the region, though some diamond drilling and surface trenching has been completed.

• **Tennessee Valley Authority** plans to sell its experimental phosphate fertilizer plant near Columbia, Tenn., at public auction. The authority says the sale will be made to the highest bidder at an auction to take place within 30-60 days from the time that TVA "receives an offer sufficient to constitute

an acceptable minimum price."

• **Westvaco Mineral Products Div.,** Food Machinery & Chemical Corp., has acquired extensive deposits of high-grade phosphate rock and shale in Rich County, Utah.

EXPANSION

• **Sulfur:** Gulf Sulphur Corp. has started construction of a \$2.5-million Frasch process sulfur plant in Mexico.

• **Cellophane:** Olin Industries' Ecusta Paper Corp. subsidiary, East Alton, Ill., contemplates building a cellophane plant near Red Bluff, Calif., on the Sacramento River. Booked as "the only plant of its kind in the Western area of the U.S.," the fate of the project, company officials say, hangs on various technical and economical studies now under consideration. "The imposition of excessively severe and infeasible standards for the Sacramento River," for example, would lead management to seek a site elsewhere.

This marks the second major expansion move by Olin in the past four months. In March, the company revealed plans to build a cellophane plant at Kern, Ind., on the Wabash River. Capacity: 33 million lbs./year of cellophane.

• **Sulfur:** Standard Sulphur Co., which is presently operating at Damon Mound, Brazoria County, Tex., will expand its facilities at a cost of \$1.5 million. Already under way, the program will include purchase of a second mobile sulfur plant to mine sulfur on the Bryan Dome (\$750,000) and additional units to expand present capacity from 250 to 400 tons/day.

• **Classified:** The Olin Mathieson Chemical Corp. is planning to build extensive new facilities at Model City, Niagara County, N.Y., according to reports circulating in the area. This is the location of the giant \$30-million Ontario Ordnance Works, built by the government in World War II.



New 'WOC' in Washington

NEWEST industry representative to take over the reins of a Business & Defense Services Administration division is Enjay's Carl Morrison. He heads the Chemical & Rubber Div. Like Harold Smith, whom he replaces, Morrison will serve a six-month term as a "WOC"—an industry man serving without com-

pensation. Importation of industry men to serve in government posts serves a dual purpose: businessmen get a broader look at how the government operates; BDSA gets a pool of industry executives who could be called up during mobilization to help administer chemical and material allocations.

4

different types of TRI-CLOVER fittings used to solve specific Corrosion-Resistant piping problems for ELI LILLY & COMPANY



Eli Lilly's modern, efficient pharmaceutical plant at Indianapolis serves as an excellent example of the way in which some of the many types of Tri-Clover Stainless Steel Fittings are utilized to solve specific corrosion-resistant liquid conveying line problems.

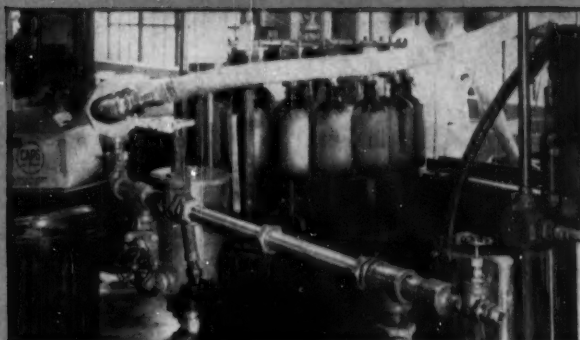
With Tri-Clover and Eli Lilly engineers working together, the most efficient, economical type of fitting and line assembly was determined to meet each individual process requirement.

With a complete line of all types of highest quality stainless steel fittings, valves, pumps and tubing, plus experienced engineering service, Tri-Clover is extremely well qualified to help *you* solve your corrosion-resistant piping problems.

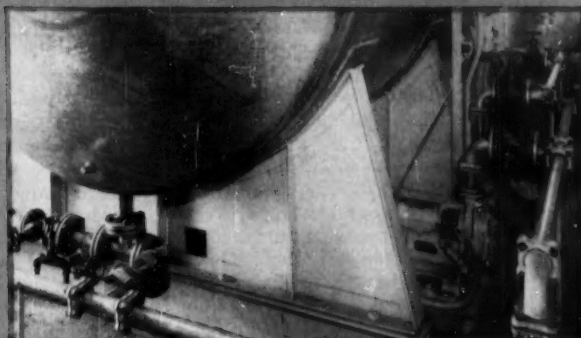
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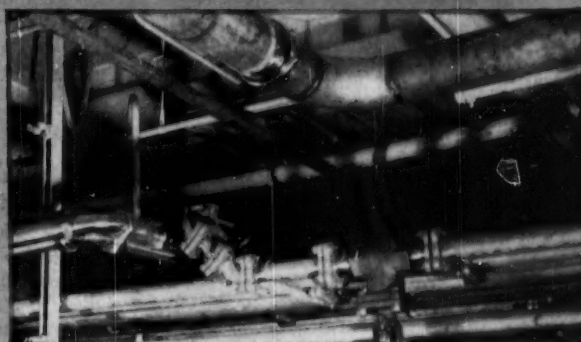
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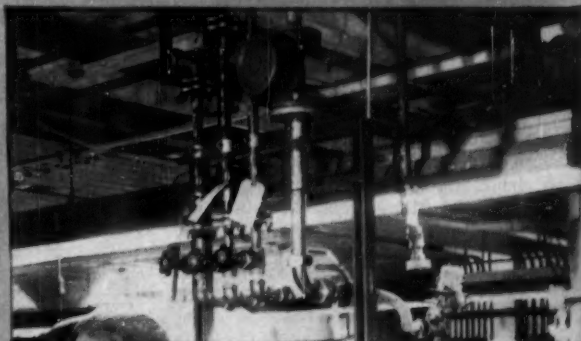
1 Polished sanitary type stainless steel fittings are used here in liquid transfer lines to a filling machine.



2 Tri-Clover stainless steel conical end fittings are used here in processing Pyrogen-free distilled water.



3 View shows Tri-Clover conical end, sanitary, industrial welding and Tri-Clamp fittings utilized in several different liquid transfer lines.



4 Here are liquid conveying lines to filling machines, utilizing Tri-Clover conical end, sanitary, and I.P.S. screwed stainless steel fittings.

L256

Too Good to Be True

Sales impressive, expansion plans piling up, money freer, say chemical men from New York to San Francisco.

Inventories are leveling off, employment's holding steady; the outlook is cheerful for second half profits.

Like baseball managers who find themselves with nine all-star players, chemical men from coast-to-coast are pinching themselves in astonishment this week. Business activity, in most sectors, is at near top-level; basic economic indicators disclose that 1954 may be the second-best year in history.

"That," as one executive vice-president points out, "makes it almost sacrilegious to talk about troubles now. Things are so much better than any of us had anticipated, we're too busy counting our blessings."

"We have nothing to complain about now," agrees a chemical company president. "Everyone I know feels much cheerier about the outlook for the months ahead than he did at the turn of the year when sales in many sectors were turning downward." On the average, executives say, business today is barreling along at the 1953 pace—some 10% ahead of 1952 standards.

Typical of the surge: Allied Chemical & Dye Corp. began to feel the lift about March, then reported its business "improved substantially—quite a bit better than a year ago." But not all its products—ranging from dyes to heavy chemicals—felt the pickup simultaneously. Notable for its early pace: nitrogen products and ammonia, which felt the spur of increased demand from fertilizer manufacturers who had been waiting for spring orders from farmers.

"Long-term funds are a little tight"

"Lower bank reserve requirements, set by the Federal Reserve System in June, have eased the long-term fund pinch we were experiencing earlier in the year," maintains one Midwest treasurer. "We had half-anticipated trouble in financing some months back. But the money market today, since short-term needs are falling well below year-ago levels, is easy anyway; lower bank requirements should insure relatively smooth sailing for chemical expansion—either started or contemplated."

"Long-term loans may be a little hard to get," confirms a Boston manufacturer. "But private money is easy to get today. It's causing a lot of us

to reconsider the expansion plans we shelved last winter. I'd say look for another gradual increase in construction in the chemical industry by late fall."

"Tax break will help more than a bit"

Tax reforms, outlined in the new tax bill under consideration in Congress (CW, July 31, p. 13), are concerning chemical executives somewhat. Any relief will come as a break—should prove an incentive encouraging heavier investment in new plants and equipment.

Scattered reaction from chemical management, however, indicates it is chafing under the scratched House provisions to ease tax treatment of foreign income. Major complaint: the new tax bill will handicap producers with heavy investment overseas. "We'd hoped for some sort of relief," admits one pharmaceutical vice-president. "Chemical companies are getting an option to take advantage of corporate reorganizations, liquidations, and other property distributions. Why can't we get a cut at the ball, too?"

"Technical manpower's still hard to find"

Southern and Central chemical manufacturers lead the field in puzzling over the continued shortage of technically trained personnel. "We hear, from the East and West that there's no immediate problem," states a basic chemicals producer in the St. Louis area. "But out here, it's still a headache to find the kind of man you want to fill a particular job. This year we made a concerted effort to tap the colleges, engineering schools—but it's the same old story. The glamor babies (petrochemical companies) got the pick of the crop; the Armed Services took what was left."

"Our plaint is a chronic one," echoes a Southern fertilizer personnel director. "It's hard to get enough good men to keep up with the pace of expanding facilities."

"Keeping an eye on the Justice Dept."

Controversy is building up, this time in the South and West, over an expected gangle of antitrust actions

by the Justice Dept. "Industrial growth in our area has been so rapid in recent years," admits one company treasurer, "that it's only natural that the Justice Dept. would be keeping an eye on developments. But lately, our representatives advise us, there have been a flood of complaints—some of them concerning chemical firms. Nobody knows where the blow will fall; everyone's sure he's not concerned; but everyone's talking about it—in more than a half-speculative manner."

"It's the most popular and morose topic of discussion here today—wherever chemical men get together," affirms a Southwest producer. "Like the revenue agents in Prohibition days, any treasury man in the area becomes the butt of immediate suspicion. It probably is strictly scare-stuff—talk that's circulated around Washington—nothing to be worried about. But we're all listening."

"Foreign competition is stiffening all over"

Growing competition from West German, other European, and Japanese chemical makers is causing concern in other quarters. "In areas like South America—where U.S. producers have had a pretty free hand since the end of the war—the going's getting rougher all the time, says a plastics company division chief. Many European companies are faced with a heavy overproduction problem. And they need dollars. So they're on the go—all the time—to cut in on the overseas market—at almost any price."

"We still have the edge from a quality standpoint—but we can't always meet prices today," agrees another. "The potentially huge Chinese market is causing us increased worry, too. While we sit home, wondering what's going to happen, European firms are getting in on the ground floor. They will have a terrific edge on us if embargo bars are dropped."

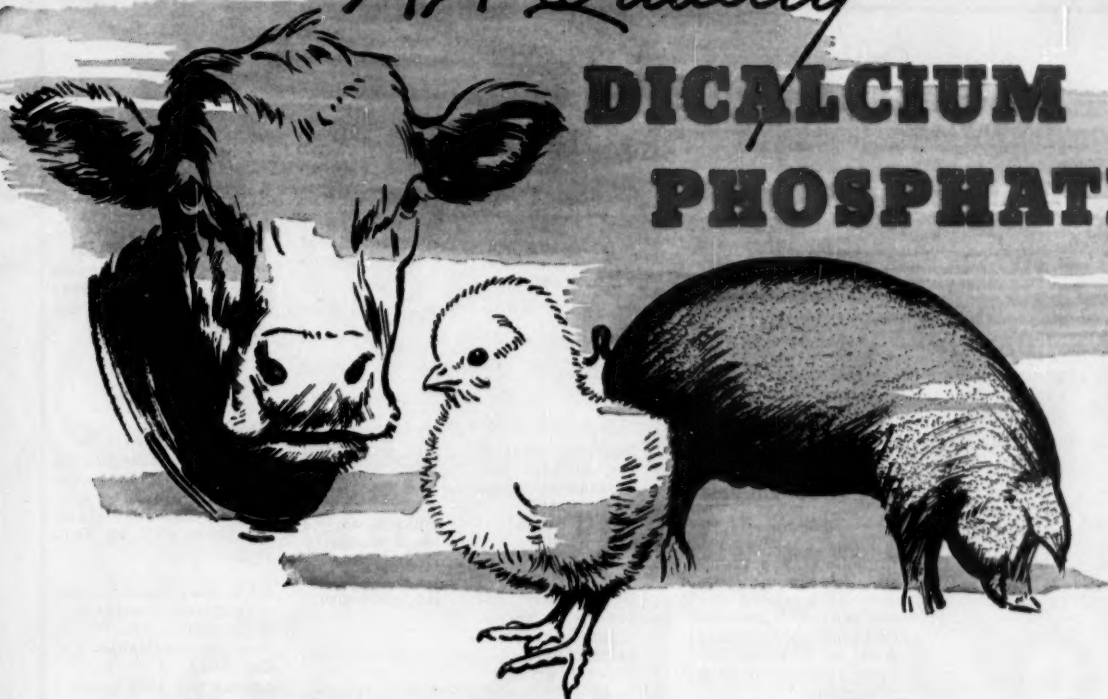
"What will happen about tariffs?"

The pros and cons of U.S. tariffs has others fretting. "Tariffs have been our major worry for a long time," says a New York president. "There's nothing new about it; it's a chronic headache. Until the new Congress convenes, we may look as though we're concentrating on other problems. But the tariff angle will still be there—in the back of our minds."

On the whole—management agrees, however—it's a mighty pleasant picture this Aug. 1954. "Almost too good to be true."

AA Quality

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Superphosphate • Complete Fertilizers

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Magnesium Fluosilicate • Potassium Fluosilicate
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Fluosilicate Mixture • Ammonium Fluoborate
Aluminum Fluoride • Magnesium Fluoride

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KEYSTONE® Gelatin: Edible, Photographic
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Outlook for Chemical Companies Doing Business under the New Atomic Law

Function	Present Law	New Law	Function	Present Law	New Law
Private ownership or use of nuclear material	Prohibited	Private companies will be able to produce and use nuclear material under AEC license—although title will remain with the federal government	Patents for discoveries and inventions relative to the use and production of nuclear material	All such patents become the property of the federal government	All non-weapon inventions in the nuclear field may be patented under normal procedure, but rules governing basic patents in the power field are still in conflict.
Private research involving use of nuclear material	May be done under AEC contract or sponsorship	Private firms are encouraged to conduct research in nuclear field under AEC license and using fissionable material furnished by AEC—either free or for nominal charge.	Sharing restricted nuclear information with non-governmental personnel	All personnel requiring access to restricted data must have the same security clearance	Information will be classed according to its sensitivity, and security clearances for access to different classifications will be fixed accordingly
Use of atomic materials and facilities for research or medical therapy	May be done under AEC contract or sponsorship	Nonprofit foundations, research groups and private industry may be licensed to use material for such research or therapy; AEC is directed to keep regulation at a minimum	Government research in nuclear field on behalf of non-federal groups	No provision	AEC may conduct research for outsiders if personnel and facilities are available. Commission may charge for this service or provide it free
Development of atomic power plants and research reactors	May be done under AEC contract	AEC would be empowered to license such development and furnish nuclear fuel for use	Use of radioisotopes by private industry	Permitted under AEC license	Encourages freer distribution of isotopes for industrial purposes with a minimum of regulation
Nonfederal construction and operation of atomic power plants and irradiation facilities	Prohibited	AEC would be empowered to issue construction permits and licenses for such projects and furnish necessary fuel	Export of power or experimental reactors	Prohibited	Permitted under AEC license

Opportunity: With Restraint

Private enterprise will get its first big chance to move into the nuclear energy business on a commercial basis. Legislation to break the 10-year federal monopoly over nuclear development passed the House early last week. The Senate wearied toward a vote on the measure after a 13-day talkathon on several minor side issues, finally passed its bill.

A complete modernization of the 1946 McMahon Atomic Energy Act, the new bill charts the role of the federal government in all atomic energy matters. In general it would provide for:

- Continuation of the Atomic Energy Commission with additional powers in regulating and controlling the nonfederal development and utilization of atomic energy.

- Issuance of licenses to private industry and other nonfederal entities for research, development, construc-

tion and operation of nuclear energy facilities and for the use of nuclear material furnished by AEC.

- Freer exchange of atomic defense information with U.S. allies and the sharing of information and nuclear material peacetime utilization of atomic energy.

Under the old law, industry has been limited to participation in study groups looking into the feasibility of commercial application of nuclear energy or in working under AEC contracts on government-financed research and development. The new bill would permit private industry to enter the field under close AEC regulation (see table).

It's a good bet that a study group headed by Dow Chemical Co. and the Detroit Edison Co. will be among the first to apply for a license under the new law. That team is already well

advanced toward mock-up of a fast-breeder nuclear power plant.

While the new bill provides for some seven different kinds of licenses for the handling and use of nuclear materials, provision is made for consolidating applications and hearings into a single package.

The House-passed bill would permit normal patenting procedure for inventions and discoveries relating to peacetime utilization unless they were conceived or invented at the time the inventor was employed by the federal government. In such instances, the invention would become public property.

This differs from the joint committee version of the bill, which would subject all the basic privately held patents in the nuclear energy field to compulsory licensing for a period of five years. The Senate version requires a 10-year compulsory licensing period. Thus the patent consideration may prove to be one of the knottiest differences to be reconciled in conference.

DAVISON BULLETIN

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SYLOID[®] 244

Syloid 244 is a highly porous pure silica gel of extremely low density. A free-flowing white powder, it appears as a fluffy snow weighing 4-4.5 pounds per cubic foot as shipped. Syloid 244 has an apparent particle size of 2-3 microns, yet individual particles are predominantly below one micron.

The chemical and physical characteristics of Syloid 244 makes it adaptable for many uses including the following:

- anti-blocking of clear plastic film
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- a vinyl flattening agent
- anti-caking for powdered products
- thickening agent for salves, lubricants and plastigels

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TYPICAL CHEMICAL AND PHYSICAL CHARACTERISTICS OF SYLOID 244

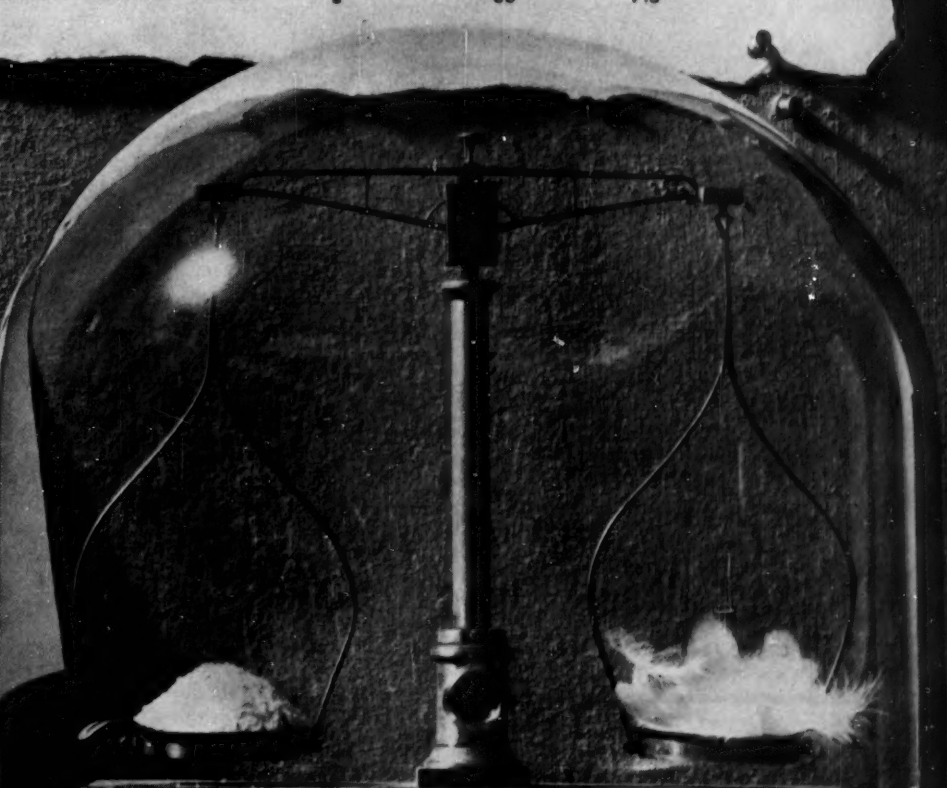
Color	white, 94 Hunter reflectometer transparent in vehicles
Appearance	uniform, free-flowing powder
Density	
as shipped	4-4.5 lbs./cu. ft.
centrifuged in toluol	7.5 lbs./cu. ft.
true (specific gravity)	2.1-2.2
pH	7.2
Silica as SiO ₂ (dry basis)	99.5%
Oil adsorption	240 lbs. oil/100 lbs. SiO ₂
Surface area (nitrogen)	292 M ₂ /gram

PARTICLE SIZE DISTRIBUTION BY WEIGHT

(water sedimentation)	
5% less than 1.1 microns	
10	1.4
20	2.0
40	3.0
50	3.7
60	4.5
80	7.0

Low density
Syloid 244
shown balanced
with feathers.

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information, suggested
applications, etc., or
contact your Davison
Field Service Engineer.



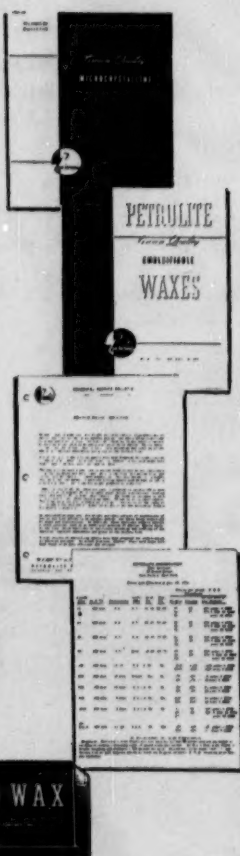
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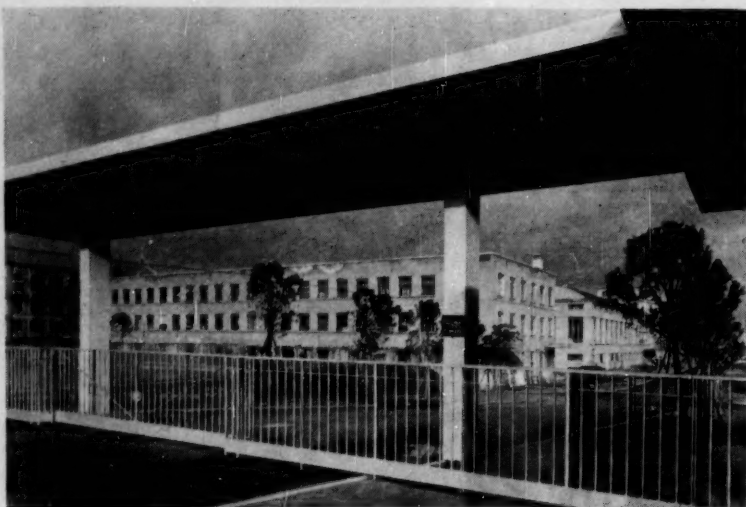


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BUSINESS & INDUSTRY



PLASTIC OUTPUT'S BOOMING: At Polymer Co.'s Terni plant, 7,000 tons/year.

FOREIGN.

Recovery/Italy: The Italian plastics industry has completely recovered from its slump—should produce 45,000 tons of materials this year, 50,000 tons by 1955. Exports have doubled in the past two years (from 3,562 tons in 1952 to 7,642 tons in 1953).

Exports/Hong Kong: Communist China continues to buy a variety of metals and industrial chemicals in Hong Kong—though much of the intrigue is evaporating—due to growing competition from Japan, other chemical-exporting countries. Main products bought today by Chinese government agencies: borax, boric acid, tanning extracts, caustic soda. Dollars are obtained, Hong Kong observers note, through the sale of Chinese native goods shipped from Shanghai, Tientsin and Hengyang.

Urea/Netherlands: A urea plant—with an annual capacity of 50,000 tons—will be built at Geleen for the Netherlands State Mines. Present output by a smaller plant in the same general vicinity runs close to 5,000 tons annually—enough to cover the Netherlands' entire requirements.

Fertilizer/India: The giant Sindri fertilizer plant—intended by government authorities to make India self-sufficient and enable it to have a large export commodity—is not even turning out enough to meet the country's own needs, says Agricultural Minister M. Bhaktavatsalam. Result: imports will have to be arranged—either from Japan or the U.S.

The minister refuses to disclose the

reason for underproduction, but says that "a government of India official is hastening to investigate it."

The Sindri plant—the largest fertilizer plant in Asia—is designed to turn out 350,000 tons of fertilizer annually, went into production in Jan. '52.

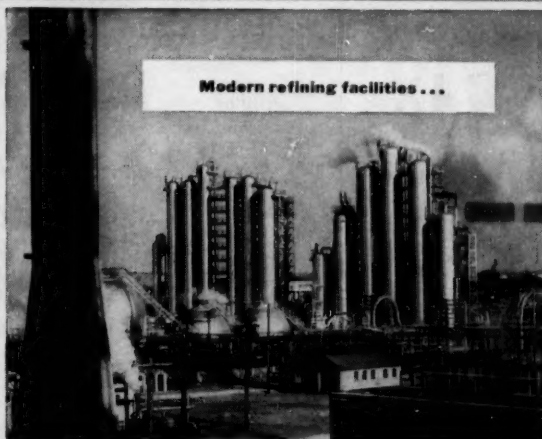
Phosphate/French North Africa: French North African phosphate production dropped off last April but is still running ahead of 1953 records. Output: 658,930 tons; export: 115,773 tons to France, 525,095 tons to other countries.

Plastic Raw Materials/Great Britain: Monsanto Chemicals, Ltd. plans to build two new plants in the Wrexham (Denbigh) area of England. One plant, to be built at Ruabon, will manufacture maleic anhydride; another (the location of which has not yet been decided upon) will produce styrene-butadiene resins.

LEGAL.

Fungicide Patent Suit: Rohm & Haas Co. has brought suit in Philadelphia in defense of U.S. Reissue Patent 23,742, under which the company sells its "Dithane" brand fungicides. The petition charges that in selling "E-Z Flo" brand of Nabam (disodium ethylene bisdithiocarbamate), E-Z Flo Chemical Co. of Lansing, Mich., and its affiliate, Diamond Fertilizer Co. of Sandusky, O., have committed both direct and contributory infringement.

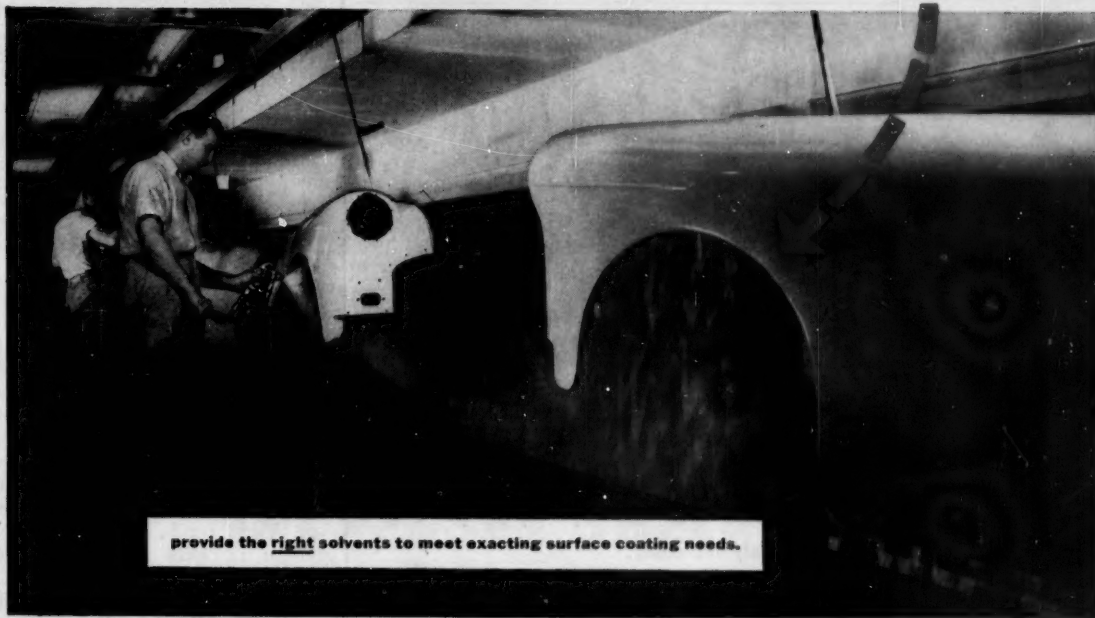
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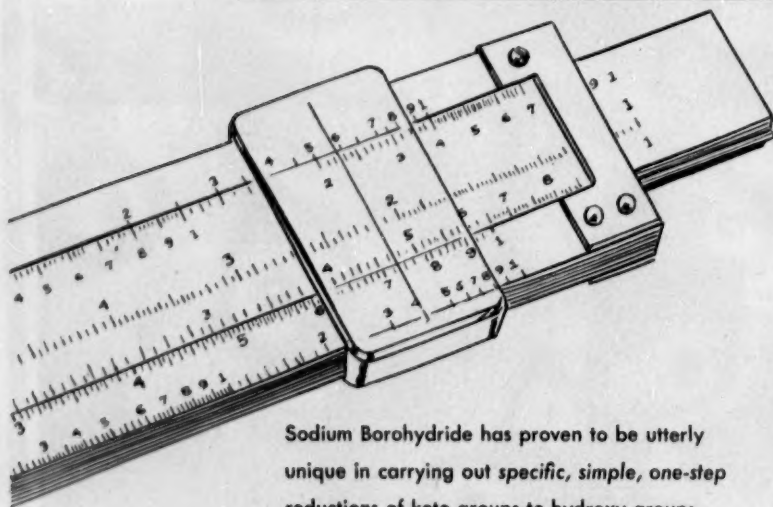
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B & I

MONTH'S WORK FOR FDA

Nature of complaint	Number of cases	Total amount of fines
Misbranded drugs	2	\$1,250
Illegal sale of prescription drugs	15	9,525
Unfit foods	7	12,100
Misbranded foods	2	1,000
Substandard drugs	11	(products seized)
Contaminated foods	40	(products seized)

about quality control and labeling requirements is attested by the latest enforcement report from the Food & Drug Administration (*see table*). None of the major pharmaceutical companies is listed in the report. The two companies fined for allegedly misbranded drugs were an Indiana firm making liniment and laxative, and a Michigan concern with so-called vitamin products. Several of the drug seizures involved "inert glandular preparations" labeled for prescription sale.

Jealous Over River: The city of Sacramento is jealously guarding the Sacramento River from potential sources of increased pollution. Even though the Central Valley Regional Pollution Control Board—a state agency—has already approved plans for an approximately \$18-million pulp mill to be built 150 miles upstream near Red Bluff, Calif., by Ecusta Paper division of Olin Industries, Sacramento is not yet convinced that it likes the idea. The city has retained an attorney, Stephen Downey, who says it may be necessary for the city to sue for an injunction against construction of the mill. The river, Downey adds, is probably the city's greatest asset; and "Sacramento has no intention of permitting, without a fight, the initiation of any new nuisance use of the river."

Chemical Plant Excluded: Under a mutual understanding between officials of Chesterfield County (Virginia) and the Du Pont company, the state circuit court will be asked not to include the Du Pont plant in a proposed new sanitary district. Purpose of the district will be to finance construction of a \$2-million sewerage system; but after Du Pont protested the original plan for inclusion in the district, it was brought out that the proposed system is not to be designed for handling industrial wastes from

Note absorption of lactic acid—container is weakened, subject to leakage, breakage, unsaleability!

Petroleum wax	100%
A-C Polyethylene	0%
Coating temperature	165°F
Test...3 days 1% Lactic acid at 40°F	

Note container hardly absorbed any acid—hence is strong, durable, moisture proof!

Petroleum wax	97%
A-C Polyethylene	3%
Coating temperature	165°F
Test...3 days 1% Lactic acid at 40°F	

POSITIVE PROOF!

A-C^{*} Polyethylene EFFECTIVELY REDUCES LACTIC ACID ABSORPTION INCREASES SHELF LIFE

Both cottage cheese containers are identical except for the coating. The one on the left was treated with petroleum wax the usual way. The container on the right had 3% A-C POLYETHYLENE added to the petroleum wax. Both were then tested with the standard methylene blue test at 40°F for 3 days.

See how the lactic acid was absorbed into the fibers of the standard package. See how A-C POLYETHYLENE effectively reduced—almost to zero—the lactic acid absorption in the container at right!

WHAT IT DOES

Tough A-C POLYETHYLENE is a hard polymer that mixes easily with petroleum waxes. It helps strengthen cartons, reduces leakage, makes the coating more uniform and homogeneous. It improves the appearance of

your package, brightens the printing, and lengthens shelf life with the increased resistance offered to damaging water vapor.

WHERE TO USE IT

Eye-appealing and loss-reducing, A-C POLYETHYLENE in wax blends is especially useful on milk, cream,

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Have your wax supplier make blends for you containing this easy-to-mix material!

For complete information on A-C POLYETHYLENE, call or write today! Use handy coupon.

*Trade-mark

SEMET-SOLVAY PETROCHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION
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A-C Polyethylene for use in _____

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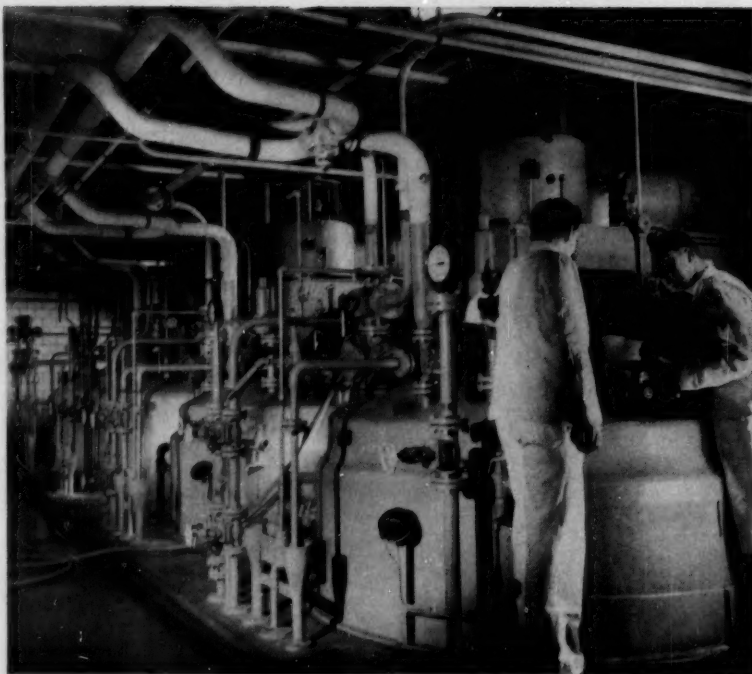
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B & I

the Du Pont plant, which has its own effluent system.

Stock Sale Asked: In a counterclaim in the civil suit filed at Wilmington, Del., by its former research director, the Permchem Corp. of West Palm Beach, Fla., denies that ex-research chief Frank Fessler is entitled to the \$1,250,000 he sued for; asks for judgment in the amount of \$100,000 against Fessler; and asks the court to order Fessler to sell his 19,800 shares of Permchem common stock at 10¢/share. The company also wants the court to declare that Fessler has forfeited any right to receive royalty payments under the patent applications for which Fessler contends that he's solely responsible.

LABOR

Judging Own Disputes: In two cases this month, the International Chemical Workers Union (AFL) is going to try to settle internal problems that have turned up in judicial and investigative proceedings.

• Expecting that this union will decide at its Chicago convention next week what to do about its Local 521 at Charlestown, Ind., Circuit Judge James Bottorf has postponed the hearing on whether control of that local should be retained by a representative of the parent union—as desired by President H. A. Bradley—or whether control should be returned to the local officers, as is favored by the ICWU's executive board. The court will call this case up again Sept. 2.

• At Seattle, Wash., ICWU Local 121 will hold a trial on Aug. 18 to decide whether Stanley Iverson should be expelled from the union. At a recent session of the House of Representatives' Committee on Un-American Activities, Iverson—who has been employed by the Seattle Gas Co.—invoked the Fifth Amendment and declined to answer questions about alleged Communist Party affiliations. Discharged from his job, he has filed a \$100,000 defamation suit against his former employer and is fighting the union's ouster move.

• **Uniform Wage Rates:** Concrete evidence that labor unions are beginning to fight for uniform wage rates for various job titles throughout the country—and particularly within each major industry—is seen in the strike by some 23,000 members of United Rubber Workers (CIO) against Goodyear. In this strike, which started nearly a month ago, the union is asking a 7½¢/hour wage increase and “a correction

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BUTYL STEARATE DIBUTYL PHTHALATE

BUTYL LACTATE NITROPARAFFINS AMMONIA

AMYL ACETATE BUTYL ACETATE

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BENZYLTRIMETHYLAMMONIUM CHLORIDE

CSC supplies American industry with 35 basic chemicals

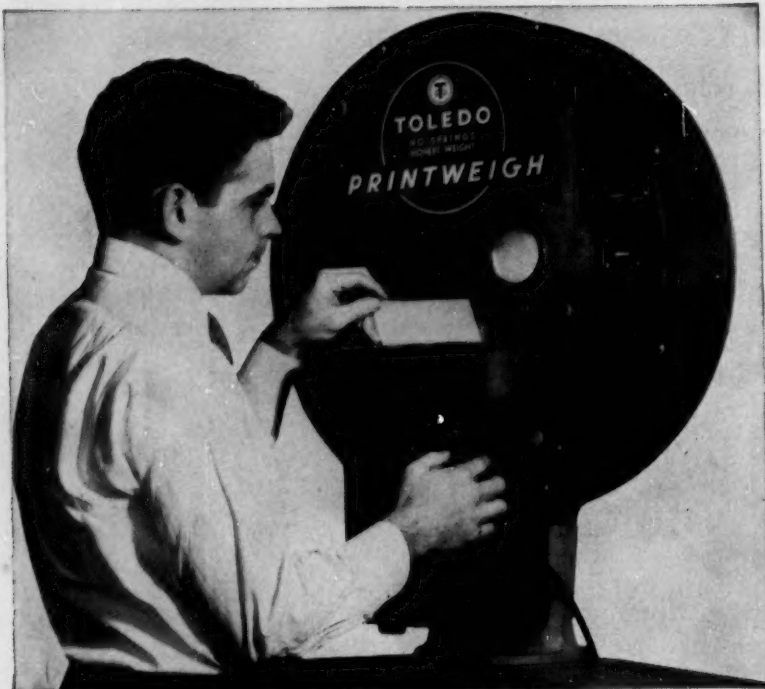
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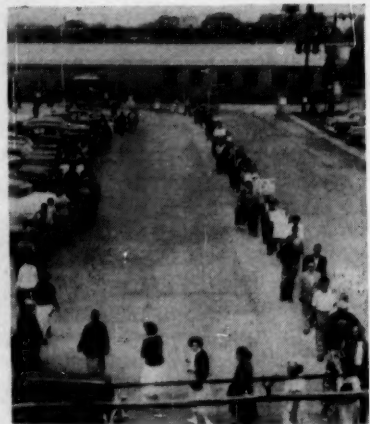
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WIDE WORLD

URW-CIO PICKETS: Stopped from picketing plant, they circle on empty lot.

of interplant inequalities" that would average out to another 4½¢/hour. The strikers may be forced to accept only the straight 5¢ boost offered by the company, inasmuch as that amount is in line with the pace-setting steel pay rise; but URW President L. S. Buckmaster is trying to get the company to bring wages at certain allegedly low-pay plants up to the industry average. For example, he charges that employees at Goodyear's sole and heel plant at Windsor, Vt. (whose pickets are pictured above) are getting 9¢/hour less than workers at similar plants of the three other big rubber companies.

Atom Plant Peace: Oak Ridge, Tenn., has calmed down after the violence-punctuated nine-day wildcat strike by about 2,000 members of the International Union of Hod Carriers & Common Laborers that halted two construction projects for the Atomic Energy Commission. The Laborers demanded a 15¢/hour wage increase, rejected a 5¢ offer, then returned to work without saying why. Thirty members of the union were fined from \$5 to \$25 apiece for violating an anti-picketing injunction.

Accord at the Top: Prospects this week are that the Oil Workers International Union and the United Gas, Coke & Chemical Workers—two CIO unions that formerly quibbled about jurisdiction over organizing petrochemical workers—may join forces by late fall. Top officers of both unions have indicated in preliminary talks at Cleveland, Denver and Detroit that they're in accord on main points of the proposed merger, and further details are to be discussed at next week's sessions in Washington.

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Calvert City offers rail and river facilities, as well as natural gas and TVA power. Good level construction land is available adjacent to the carbide-acetylene operation.

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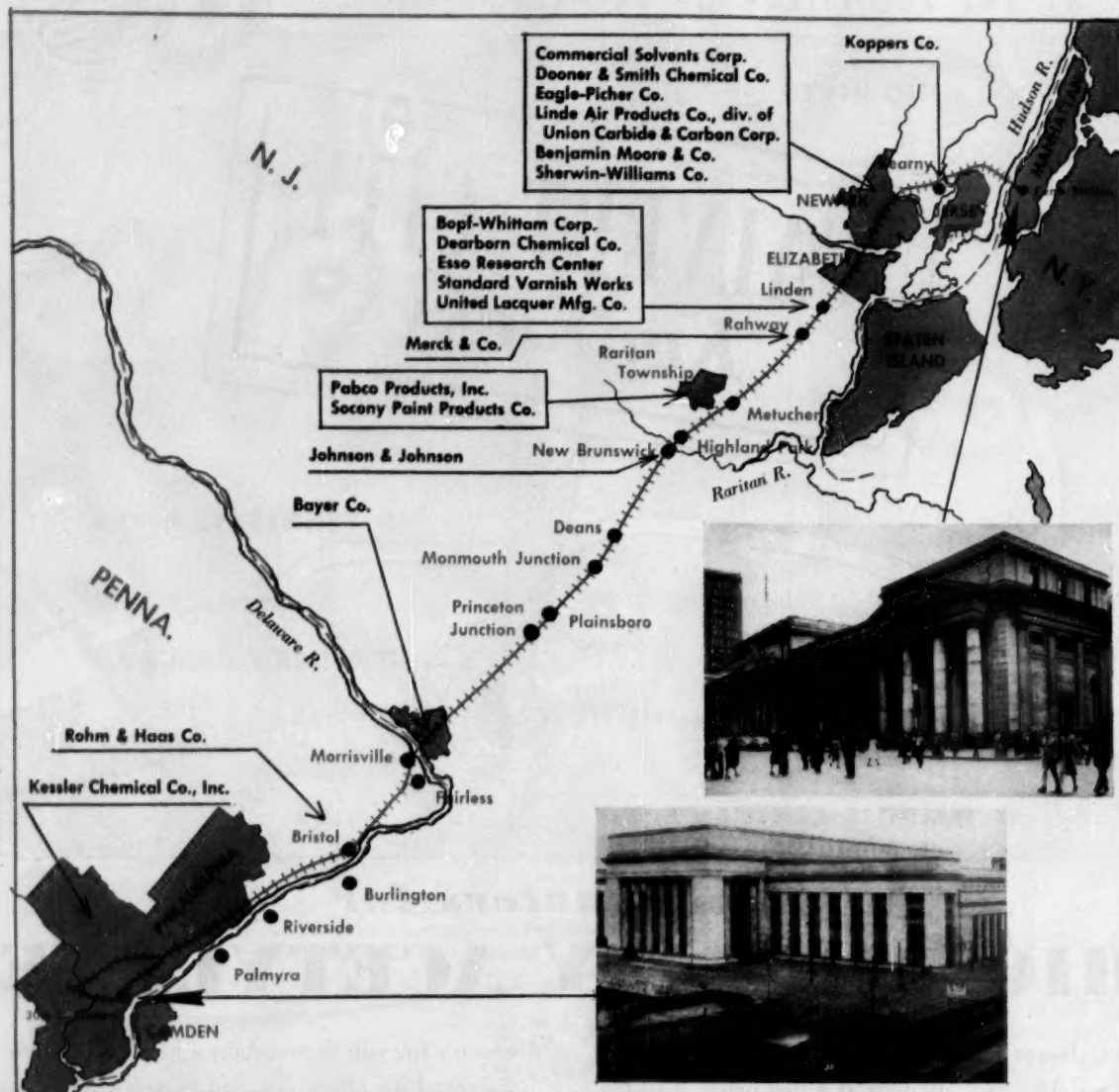
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A DIVISION OF AIR REDUCTION COMPANY, INCORPORATED

August 7, 1954 • Chemical Week



Chemical Avenue, U. S. A.—90 Miles Long

This week—in the heart of the summer vacation season—thousands of tourists every day are railroading over a 90-mile stretch of countryside that might well be called the showcase of the U.S. chemical industry.

Between two of the world's largest railroad depots—Pennsylvania Station in New York City and Thirtieth Street Station in Philadelphia—resort-bound and home-bound passengers aboard mainline trains of the Pennsylvania Railroad can see dozens of chemical process plants on sites abutting the right-of-way. They range in size from three-man, one-room operations to mammoth, multibuilding factories

with several thousand employees; and collectively, these plants make up a principal cross-section of the part of the country in which the chemical industries are clustered most thickly.

The 1½-hour trip—scheduled time on the line's fastest trains—takes scenery-hungry vacationers through three states—New Jersey, New York, Pennsylvania—that together account for more than 28% of the nation's total chemical production. Much of that 28% portion comes from the plants turning out chemicals and allied products in the eight counties traversed on this one run. Correspondingly, it's an odds-on bet that no other 90-

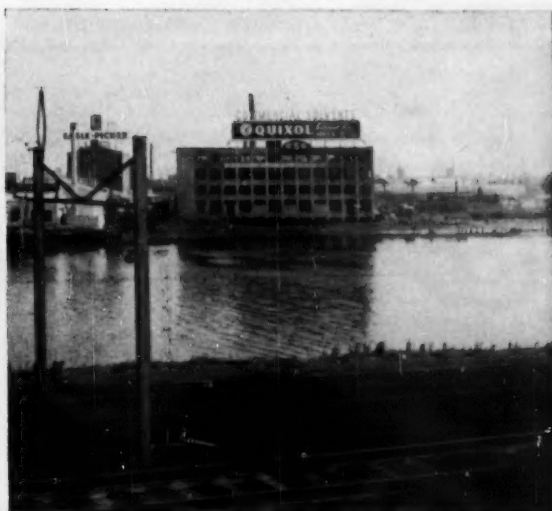
mile trackage carries as much chemical freight as this one.

Between-Meals Junket: On a daylight trip east, a typical tourist leaving Philadelphia after breakfast on the "Morning Congressional" would notice only a few, relatively small chemical plants, some of them in lofts in buildings shared with other manufacturers, inside the Philadelphia city limits.

He wouldn't see the truly giant chemical plants in Philadelphia—e.g., Rohm & Haas, Barrett Div. of Allied, Du Pont, and Publicker, each with more than 1,000 employees—but he does see two enterprises big enough



KOPPERS AT KEARNEY: Near Passaic River, a landmark.



NEAR NEIGHBORS: On Newark river bank, two processors.



BIG NAMES IN PAINT: On Newark skyline, a meaningful pun for customers and a well-known, well-coated globe.



to have a separate building apiece. These are Kessler Chemical Co. and McCloskey Varnish Co. (*see cuts, p. 34*), both of which are on State Road in northeast Philadelphia where the Pennsy's main line parallels the vital Delaware River, quarter to half mile away.

As his train picks up speed crossing the flat, truck-farming fields of Bucks County, the tourist passes through just one city, Bristol. There he glimpses some distance from the tracks the big Rohm & Haas plant (*see cut on p. 34*) that employs approximately 2,000.

'Garden State' Next: Five minutes and eight miles later, his train swings through Morrisville, Pa. (junction for the big Fairless Steel Works) and takes the bridge over the Delaware

River into Trenton, New Jersey's state capital—where there's a one-minute stop. On resuming the journey, a tourist spots the Bayer plant (*pictured on p. 34*), then goes nearly 25 miles before getting into the Garden State's chief concentration of chemical facilities.

At New Brunswick, he encounters the main office and plant of Johnson & Johnson (*see cut, p. 34*), makers of drug, cellulose and plastic products as well as surgical dressings. Then, with 32 miles to go on this run, an alert passenger can sight more than a dozen important chemical plants within 25 minutes. First of these are two manufacturers of paints and related items in Raritan Township: Pabco Products (*see cut on p. 32*)

and Socony Paint Products (*pictured on p. 34*).

He'll have no trouble noticing the landscaped site of the whopping Merck plant at Rahway (*cut on p. 32*), which borders the right-of-way for nearly 1,600 ft.; but two miles farther east, he'll have to be watching closely so as not to miss the chemical installations in the Linden constellation: Bopf-Whittam, Dearborn Chemical, Esso Research (*all pictured on p. 32*); and Standard Varnish Works and United Lacquer Mfg. Co.

On Last Lap: Then come the cities of Elizabeth (with Reichhold and various other chemical facilities, mostly located some distance from the main line tracks) and Newark (one of the nation's leading chemical centers,



FACING THE PUBLIC: At Linden, N. J., two smaller concerns display firm names so they'll be seen by thousands of travelers.



Story begins on p. 30

with more than 10,000 persons working in this industry). Through his train windows, a tourist notes the plants of Commercial Solvents, Eagle-Picher, Moore Paint and Sherwin-Williams (all pictured on p. 31). Linde Air Products Div. of Union Carbide and Carbon, and Dooner & Smith Chemical also are near railroad property, and still other chemical plants can be discerned farther off, if one knows where to look.

It's just 10 more miles to the end of the line as the train pulls out of Newark station after a brief halt. The tracks run north across the Passaic River, then east through Kearney, where one can clearly see Koppers' tar products plant (cut on p. 31). Also present, but not readily seen from the train: Barrett Div. of Allied, Reilly Tar & Chem-

OFF TO ONE SIDE: In Raritan Township, N. J., Pabco Products' new plant.



MARKERS ON JERSEY MEADOWS: At Linden, Esso Research Center; at Rahway, Merck's shrub-studded site along railway.



Oklahoma serves the Southwest, the nation's fastest growing market area.

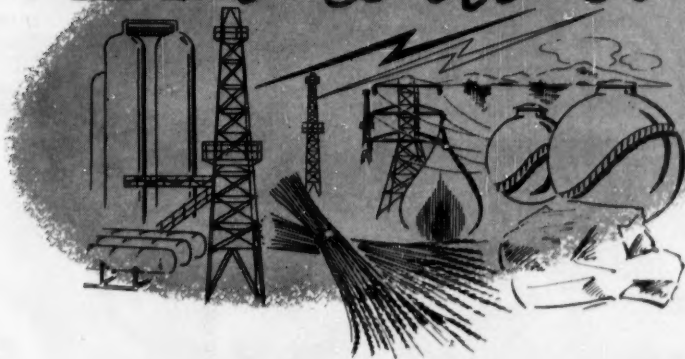
Within a 500 mile radius of Central Oklahoma, there reside 37,822,000 people who receive annual income payments of more than \$53,000,000,000. These people spend \$38,500,000,000 in retail sales and have bank deposits in excess of \$36,000,000,000. Oklahoma is ready to serve you in this fabulous market.

Oklahoma labor has proven to be productive and easily trained in many diversified skills in developing industry that recently located in our State. Pride and stability in the individual worker is reflected in the negligible amount of man-days lost through work stoppage or labor disputes, thus a reduction in cost of operation and increase of marketable output.

OKLAHOMA Men



OKLAHOMA Materials



Oklahoma's natural resources and raw materials are viewed by industry in terms of new plants and plant expansion. Economical natural gas, refinery gases, liquified petroleum gas, fuel oil, limestone, coal, water and agricultural products are all available in large quantities to meet present and future needs of industry.

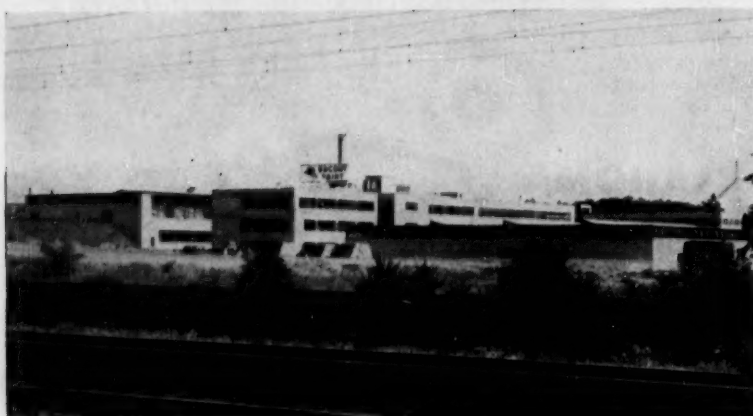
Many other facets of Oklahoma's industrial picture bear investigation. Economical power in large quantities throughout the State, an extensive network of air, rail, truck and motor bus transportation; a tax structure beneficial and profitable to industry and numerous industrial sites serviced by utilities, highways and railroads to complete your industrial picture. Look into Oklahoma and then decide that your future is in Oklahoma.

We know that your business has its individual requisites and demands. Therefore, to answer specific questions as they pertain to your industry, write in confidence outlining your needs and requirements. A factual report will be submitted for your consideration.





SIGHTS IN TWO STATES: In New Brunswick, Johnson & Johnson; outside Trenton, Bayer; near Bristol, Pa., Rohm & Haas.

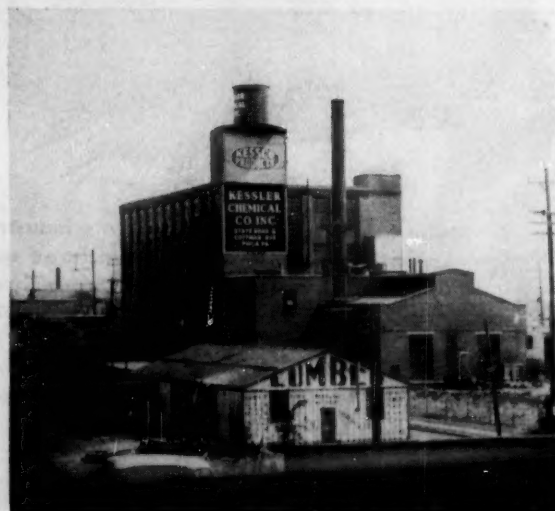


RARITAN NEWCOMERS: For Socony Paint and neighbors, three new sidetracks.

Story begins on p. 30

ical, and numerous smaller establishments. Then over the Hackensack River, through Secaucus and Union City, and under the broad, salty estuary of the Hudson River into the subterranean railroad yards beneath sprawling Pennsylvania Station in mid-Manhattan—just in time for lunch.

Thus travellers on this one short trip can see a thick slice of the U.S. chemical industry. It's not just coincidence that all these plants are here: between the nation's two chief seaports and within 600 miles of more than 43% of the U.S. population, chemical firms are almost ideally located for markets, transportation.



STATE ROAD STALWARTS: Near Delaware River in northeast Philadelphia, varnish and emulsifier plants as seen from train.



BACK IN THE 1880'S

IN THE DAYS OF

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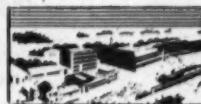
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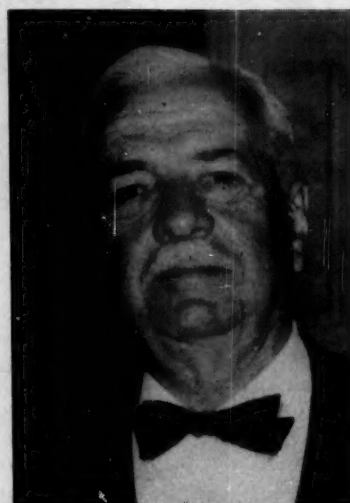
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B & I



TOWNSEND: Gets Justice Dept. support.

Time to Take Sides

The battle lines were drawn up more definitely in Washington last week as the Justice Dept. tossed its weight behind Alien Property Custodian Dallas E. Townsend on the subject of the Dirksen bill, now before Congress.

William P. Rogers, deputy attorney general, voiced the opinions of Justice in a letter to research workers at the Ozalid Div., General Aniline & Film Corp. Said he: "The return of General Aniline and similar properties to their foreign owners (as proposed by Secretary of State Dulles in Congressional hearings) would be a windfall to former enemies. Therefore the Justice Dept. is opposed, and continues to be opposed to the proposed legislation."

Ozalid staff representatives had been forthright about their concern in the matter, had stated that they frankly feared that "foreign ownership would lead to the rapid disintegration of present research and development facilities—that Ozalid would rapidly sink back to its former prewar status of complete dependence on foreign research."

It shapes up as a out-and-out dog-fight between executive and judicial branches of the Administration—unless a compromise agreement is forthcoming.

Snag in the Works

West German chemical exporters, working like beavers to increase trade with the United States, say they're encountering one major stumbling block: short-term financing.

And according to the U.S.-German Chamber of Commerce, the situation's not likely to clear up in the near future—because of three major conditions



Which car of Caustic Soda saves you the most money?

Both of these cars look alike, and their capacities are the same. Both are filled. Yet the one on top may save you \$131 per car. Can you guess why?

The answer is simply that the car on top contains 73% caustic soda, while the other contains 50%.

More and more companies are specifying the higher concentration in order to save money. These savings are possible because:

1. A car of 73% contains more caustic by volume.
2. A car of 73% can be unloaded as fast as a lower concentration, thereby saving man-hours.

One Columbia-Southern customer who converted from 50% to 73% figured the savings to his company at \$131 per car. Other customers who made the changeover show total annual savings ranging from \$1179 to \$35,100.

The amount of caustic soda you use and your location will determine how much you may save. But the point is: If you use caustic soda, you owe it to yourself to check the possible economies. Our staff will be glad to do the figuring for you—no obligation, of course. Just contact the Caustic Soda Department at our Pittsburgh office.

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B & I

that continue to wreak havoc on German firms wanting to do business here.

- First there's the perennial problem of "high U.S. tariffs."

- Second, U.S. importers today are demanding credit from German chemical makers—credit that the German producers simply can't proffer. Complicating the picture: U.S. firms, by and large, are consistently refusing to give letters of credit to German-owned corporations.

- Third, German firms are reluctant to sell on credit terms—even if they could. Reason: "There has been a marked increase recently in the number of U.S. firms that have been remiss in paying their bills. And with capital as short as it is in Germany today, chemical companies just can't afford to do business that way."

The Way Out? In an effort to find a path out of the muddle, Chamber officials are suggesting that German firms seriously consider the use of factors—six of which in New York handled U.S. imports from Germany before the war. (The factor supplies money to the manufacturer by outright purchase of the accounts receivable; a bank or finance company usually gets a security title; the German firms have the advantage of immediate conversion into dollars.)

Whether German chemical companies will choose to exploit this procedure remains to be seen.

KEY CHANGES . .

Robert B. Wittenberg, to vice-president, Great Lakes Carbon Corp., Niagara Falls, N.Y.

Charles T. Silloway, to president, Warner-Chilcott Laboratories, New York City.

Richard D. Waters, to vice-president, Vick Chemical Co., New York City.

Robert L. Gibson, to general manager, Chemical and Metallurgical Div., General Electric Co., Pittsfield, Mass.

Jack M. Pope, to vice-president, and James N. Kirkwood, to controller, Food Machinery and Chemical Corp., New York City.

W. K. McCready, to director of manufacturing, Velsicol Corp. (subsidiary of the Avery Corp.), Chicago, Ill.

Hugh W. Sloan, to director of operations, St. Regis Paper Co. (Canada) Ltd., Montreal.

W. H. Upson, Jr., James J. Upson, Walter P. Ericks, Francis H. Hall, and Homer H. Woods, to directors, The Upson Chemical Corp., Lockport, N.Y.

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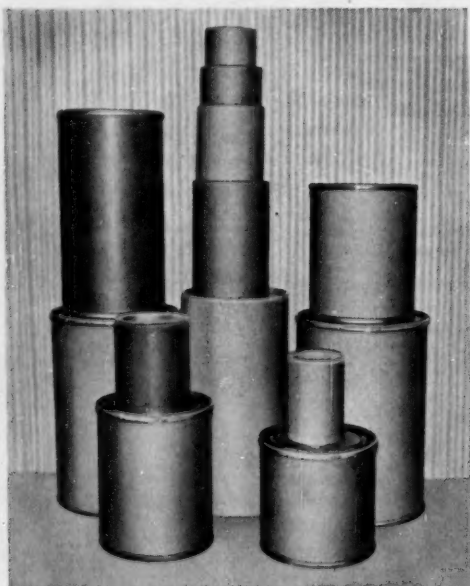
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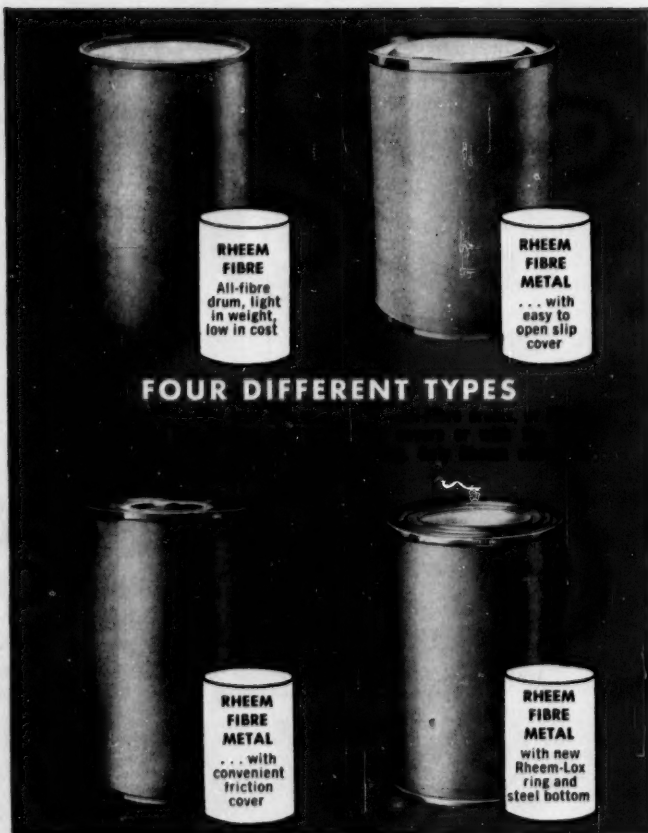
To supplement its line of steel shipping and custom equipment containers, Rheem has added a complete line of Fibre and Fibre-Metal drums. These strong, light weight, inexpensive drums come in four types and in a wide variety of sizes.



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Choose the size that best fits your needs. Fibre drums from 1 to 32-gallons in capacity; Fibre-Metal drums from 5 to 60-gallons. There is virtually a size for every possible requirement.

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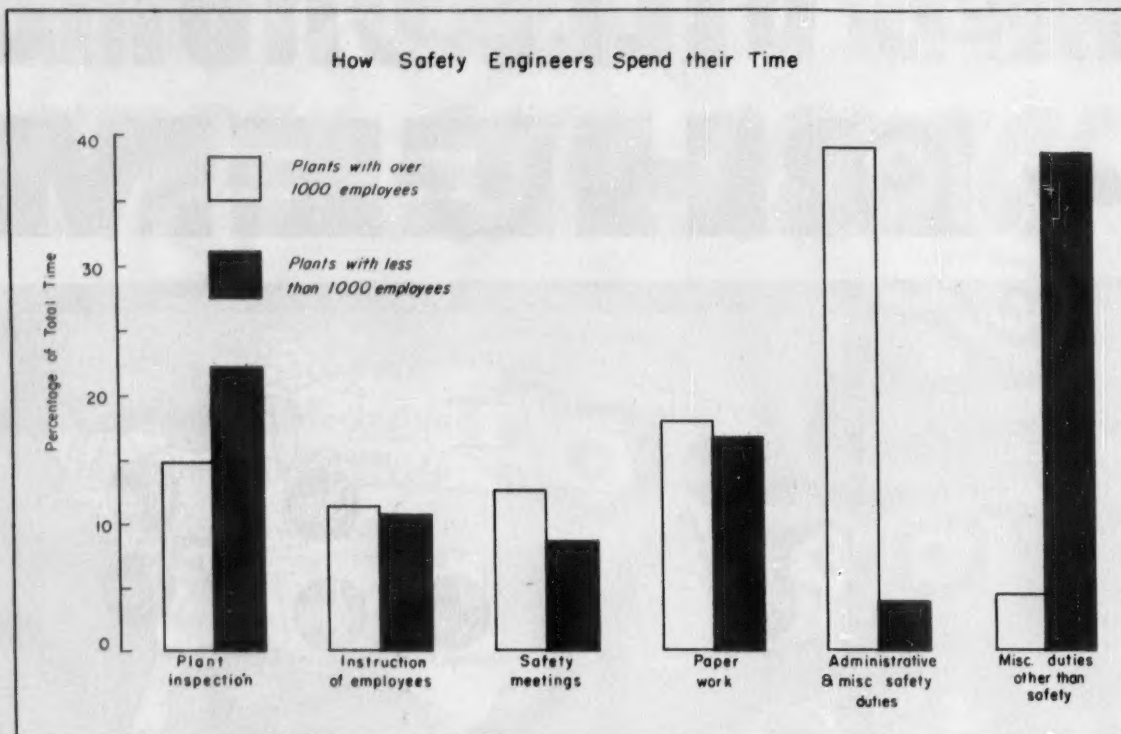
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PRODUCTION



Selling Safety Is Their Job

According to the latest figures of the Bureau of Labor Statistics, the chemical industry last year went through its safest year yet (CW, July 3, p. 19). This showing can be attributed in large measure to the collective efforts of the more than 10,000 full- and part-time safety engineers, a group surveyed by CW last week on their tasks and schooling.

The survey reveals that if you wanted to congratulate one "average" safety engineer for the fine record posted by the industry, you'd find yourself shaking hands with a man who: makes between \$6,000 and \$8,000/year; is in his early or mid-40s; has spent about 19 years working around chemical plants, about 9½ years of which have been spent in safety work, most of the rest of it in production.

In conversation, you'd find him pleasant, chatty, something of an extrovert. In his 19 years' experience, he has amassed a good deal of understanding about the technical problems of making a chemical plant go. But he thinks that far and away the most important characteristic for his particular job is an ability to get along with and to handle people.

If you questioned him further, you'd understand why. For he spends most of his time touring the plant and talking to the workers, instructing employees and attending safety meetings with upper and lower levels of management.

Normal Departures: That, of course, represents only the average safety engineer and, as the survey points up, there are some extreme deviations from the normal.

Probably the most significant differences, however, are between safety engineers in big and small plants and between college and noncollege graduates. In plants that employ less than 1,000 people, for example, the safety engineer is likely to double as a plant manager, plant engineer, chief chemist or quality control overseer. In the bigger plants, if he has another job or title, it's usually one closely associated with safety work. This is how it breaks down:

- In plants employing less than 200 people, the safety engineer spends only 38% of his time in actual safety work.
- In plants employing between 200 and 500, one-third of the safety en-

gineers work at it directly full-time; the remainder spend 52% of their time in duties related to safety.

- In plants employing between 500 and 1,000, 60% of them are full-time safety engineers, 40% spend an average of 78% of their time in safety.

- In plants employing over 1,000, 77% of them are full-time safety engineers; the rest devote about 83% of the working day to safety.

Also, the safety engineer in a bigger plant is accustomed to shouldering a larger burden of responsibility. The corollary of that is that he makes more money and is more likely to have a degree. Thus, the safety engineer who is a college graduate and who works in a big plant may make up to \$6,000 more than his noncollege-trained counterpart in a smaller plant.

Universal Yardstick: The common denominator for safety engineers in both big and small processing plants is their manner of sizing up their jobs. The overwhelming majority singled out the ability to get along with people as their single most important asset. Said one: "Since about 85% of all accidents are either directly or indirectly caused by the 'human element', I have



THIS IS GIRDLER



This vinyl chloride monomer plant of B. F. Goodrich Chemical Company at Calvert City, Kentucky was built by Girdler. Plant in circle is hydrogen plant of Girdler design . . . also built by Girdler.

Another Chemical Plant built by Girdler

HERE IS FURTHER EVIDENCE of continuing confidence placed in Girdler service. This is the fifth major project to be completed for B. F. Goodrich Chemical Company by Girdler. Starting with Goodrich's basic process data, Girdler engineered and built this vinyl chloride monomer plant. Included is a hydrogen plant of Girdler design and construction. Efficient *coordination* of all project phases and *centralized responsibility* by Girdler saves valuable time. If you are planning an expansion or new facility, call Girdler . . . and profit from this *complete service*.

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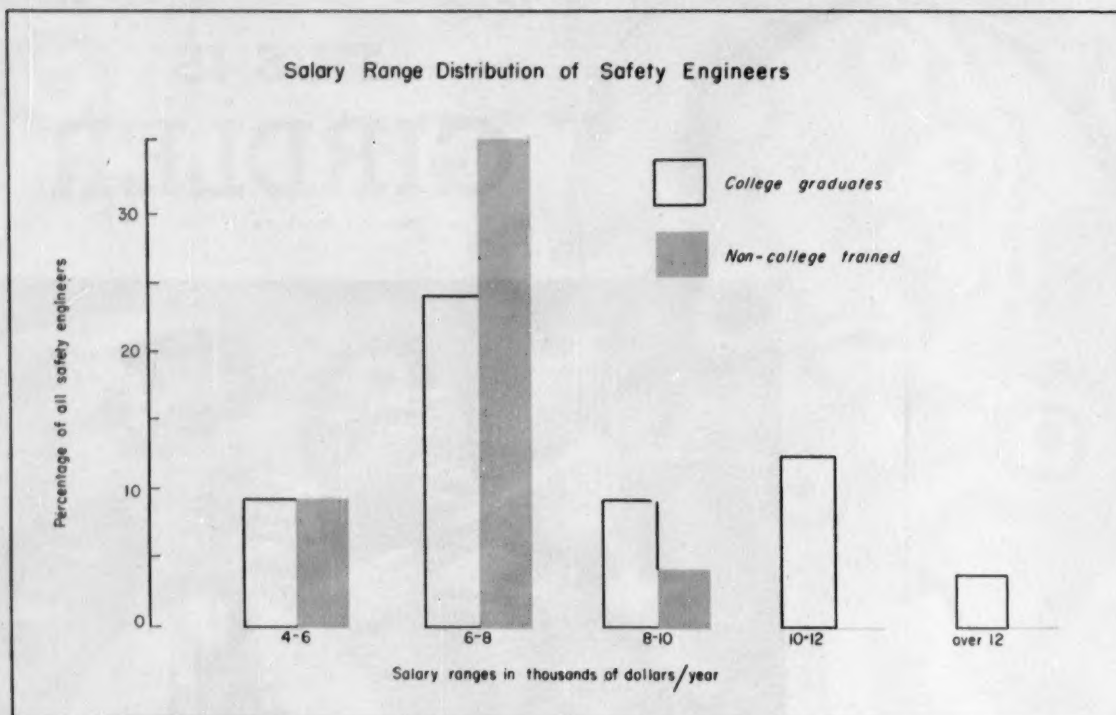
Chemical Processing Plants	Plastics Materials Plants
Hydrogen Production Plants	Sulphur Plants
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to be able to get along with people—at all levels.”

A few others thought that “salesmanship” was a better word to describe their most important asset. “My job,” said one, “is simply to sell safety. And it’s a very salable commodity if you believe in it yourself.”

At the same time, safety engineers do not underrate other qualities. Next in importance to getting along well with people, they feel, a good safety engineer should be an able administrator and should have a thorough knowledge of the technical aspects of the chemical plants in which he works.

Their own experience and background is varied. Of the college graduates, slightly over half are engineers. Most of the degrees are in chemical engineering, but a good percentage are in mechanical and industrial engineering. Another 30% are graduate chemists; the remainder have degrees in personnel or business administration.

Most of those surveyed listed production as their presafety experience. But a sizable number came up from the maintenance ranks; a few from research and development. A small minority had no technical experience but had worked in payroll or accounting departments or had held down similar purely administrative jobs.

Although there is no unanimity in

their feelings about the makeup of the ideal safety engineer, their thoughts are fairly well defined. Here’s how they answer the question “What courses or background experience do you believe would be of the greatest value to an aspiring young safety engineer?”:

- About 31% say he should take technical courses, specified chemistry and engineering as well as courses in safety and fire protection.

- Another 20% think he would spend his time more profitably undertaking administrative courses in industrial relations, economics, psychology and public speaking.

- Roughly 20% feel that experience is the best teacher, and the would-be safety engineer should get as much direct operating experience in a chemical plant as soon as possible.

- The remaining 29% have varied ideas on the subject, advise him to get experience ranging from sales to labor relations.

Raising Their Sights: For what sort of higher-echelon job does the safety engineers job equip him? Again, the feelings were mixed, but most of the answers fall into two categories. The man in the small plant, in general, hopes his next promotion will be to a top slot in the production department—like plant manager, assistant plant manager or chief engineer. The man

in the bigger plant, on the other hand, looks forward to a more responsible job in safety. Many in big companies see their immediate future as safety director of the entire company.

In general, their approach to their respective jobs is as varied as their backgrounds. But 81% express the opinion that to do a good job, a safety engineer has to have solid support by management and a supervisory force that will cooperate in putting his program across. Their composite idea of a safety engineer’s duties looks like this:

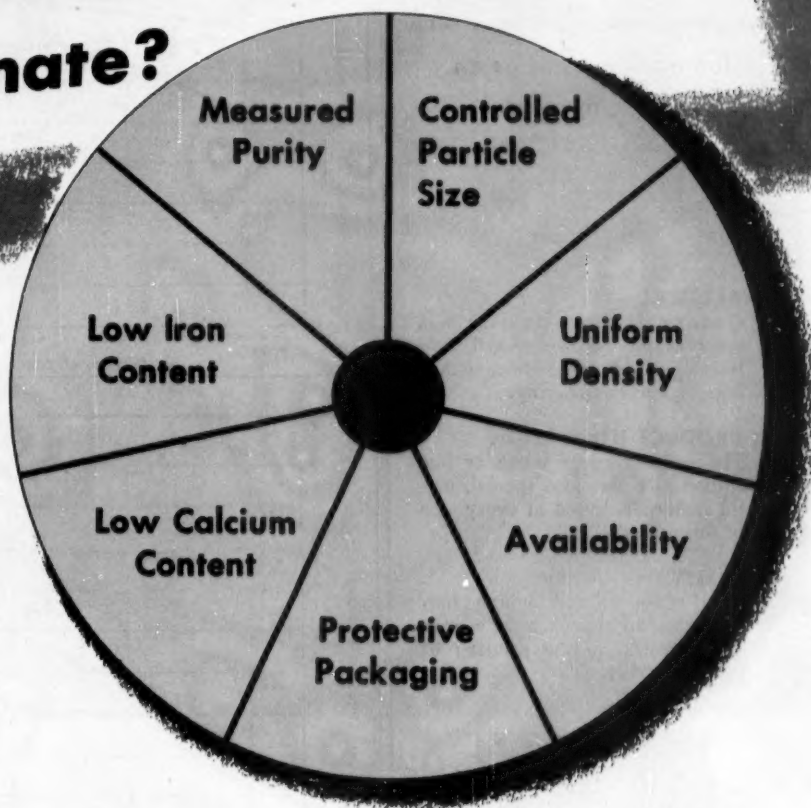
- He must know plant conditions and keep management informed. He must also have first-hand knowledge of the workers and their particular problems. To accomplish both, he spends a good deal of his time inspecting the plant and talking to the workers.

- He must educate employees in the fundamentals of safe operating procedures. Consequently, another large chunk of his time is devoted to teaching workers, particularly new ones.

- He has to keep up-to-date and rectify unsafe conditions before they become major problems. He accomplishes this through safety meetings with management and plant safety committees.

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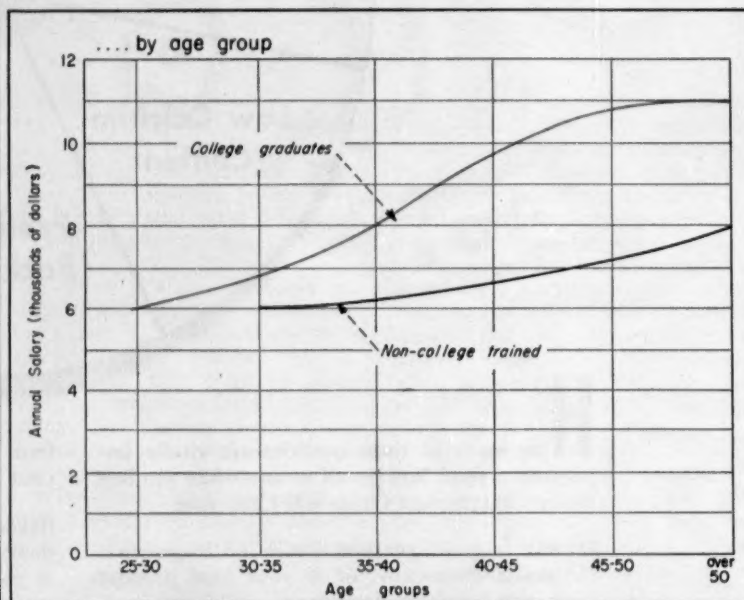
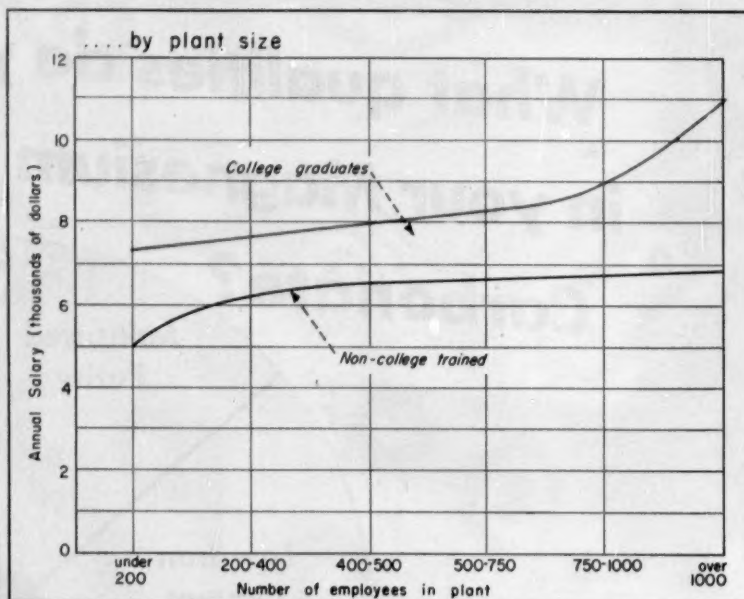
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PRODUCTION

How Safety Engineers' Salaries Break Down . . .



logical to expect that a safety engineer in a big chemical plant would devote full time to the job, whereas safety might be only one of many responsibilities for an engineer in a small plant. Similarly, you'd expect the man in the big plant to have more responsibility, make more money.

On the other hand, safety experts point out that small plants have been, by and large, the chief offenders as far as frequency and severity of industrial accidents is concerned. They conclude

that small plants don't devote enough attention to safety. And they argue that money spent on safety is a sound investment, that it is returned many times over through reduction of accidents, more efficient operations.

The survey tends to reinforce this view. If the smaller plants were to raise the status of their safety engineers, they could conceivably improve their performance. They'd be making the industry's already good record better.

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W&D-4971

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In short, you get America's foremost insecticide—a product that has been field-proved for effectiveness against such damaging soil pests as *rootworms*, *wireworms*, *white grubs*, *chinch bugs*, *green June beetle larvae*, *European chafer grubs*, *sugar beet maggots*, *Japanese beetle larvae*... and perhaps most important, against the ever dangerous *grasshopper*—without assuming and production headaches or expenses.

There are big earnings to be made with miracle *aldrin*—so why not investigate our no-risk way to a safe, dependable *aldrin* supply?

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PRODUCTION

PROCESSES

Willing and Ready: Eagle-Picher (Cincinnati) is dickering with the Bureau of Mines for the lease of the latter's zirconium facilities at its Northwest Electro-Development Station at Albany, Ore. Talks, however, are strictly in the preliminary stage, and no lease or sale of the facilities has been made.

Until recently, the Albany plant was the Atomic Energy Commission's sole source of zirconium. But private firms are now steadily boosting their zirconium production; when their output becomes adequate, the Albany facilities can be used for process development work. And that, presumably, is where Eagle-Picher's interest lies.

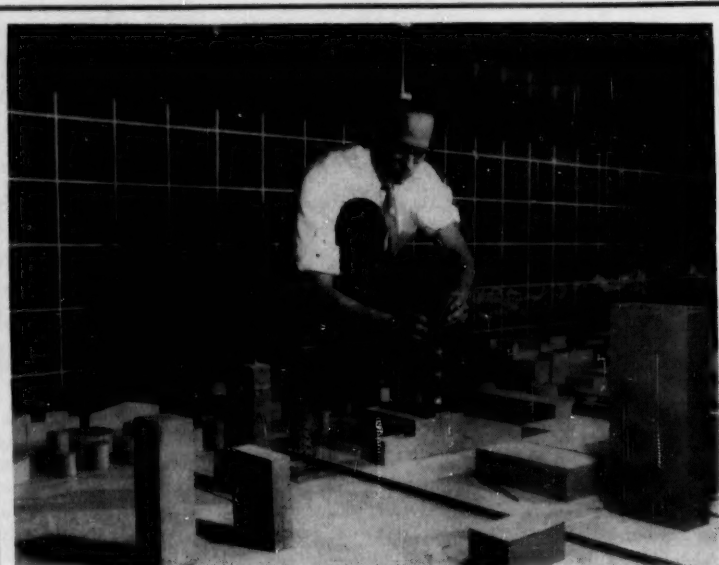
Licensed and Ready: Commercial Solvents Corp. (New York) has given Chemical and Industrial Corp. (Cincinnati) the right to license to users the Stengel ammonium nitrate process (CW, Oct. 24, '53, p. 50). An engineering firm, CIC will design and erect plants using this operation. Briefly in review, the process starts with nitric acid and ammonia from

charge tanks. The materials are then reacted at about 400 F, form a molten material containing approximately 99.3% ammonium nitrate. Alternative end products other than the molten salt are ammonium nitrate solutions or granules.

Simplified Descaling: Once again chemistry has come to the aid of the metals fabricator. Two processes—both in early stages of development with several factors still undetermined—have recently emerged from Boeing Airplane Co.'s engineering unit, are helping solve problems of scale removal from titanium and stainless steel after heat treatment.

The processes, described in a paper by Boeing engineer Bryce Chambers, do this by inhibiting scale formation or by converting normal scale into a form that is more easily removed later. The conversion operation, used on titanium, works like this:

Initially, the metal is given a pre-anneal coating with an aqueous mixture of carbonates and nitrates. The nitrates act as oxidizers, convert the normal scale oxides into oxides of higher oxygen content or different crystalline structure. Meanwhile, the



Pollution: Aerodynamic Approach

PUTTING oil refineries in wind tunnels may never replace ship-building within bottles as a pastime, but it's more practically rewarding in the search for air pollution control factors. With a scale (16 ft.; 1 in.) model of Esso's Baltimore re-

finery, a New York University research scientist simulates surrounding buildings, terrain and wind in a special low-speed wind tunnel, determines stack heights and other conditions that most effectively disperse pollutants.



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TERGITOL Non-Ionic NPX—detergent, wetting agent, dispersant, and emulsifier

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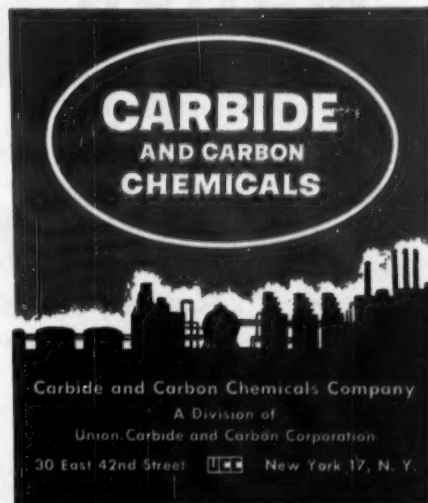
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In Canada: Carbide Chemicals Sales Company, Division of Union Carbide Canada Limited, Toronto.

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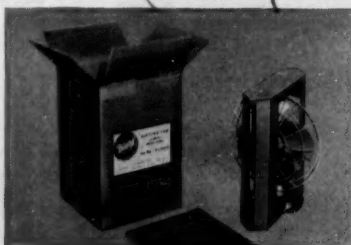
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PRODUCTION . . .

carbonates convert the normal oxides or the higher oxides into a nontenacious titanate form. The over-all scale produced by the mixture, then, may be a combination of titanates and higher oxides.

This new scale has a different coefficient of expansion from the metal surface. On cooling, part of it cracks and can be removed with gentle rubbing; that which remains is taken care of by a single brief immersion in a modified nitric-hydrofluoric acid pickling solution—as compared with removal of normal titanium scale, which resists pickling.

On the other hand, the inhibiting procedure used on certain stainless steels employs an entirely different approach, forms a physical barrier between the steel and the atmosphere. After some initial experimentation, Boeing engineers found a silicon-containing substance that decomposes on heating and deposits a finely divided silica coating on the metal surface. Still not fully understood is the part played by electrical forces, which apparently cause the silica to deposit on steel but which won't permit deposition on titanium.

Following standard heat treatment, the silica barrier can be easily brushed or rinsed off. It is claimed that the silica markedly inhibits oxidation.

EQUIPMENT

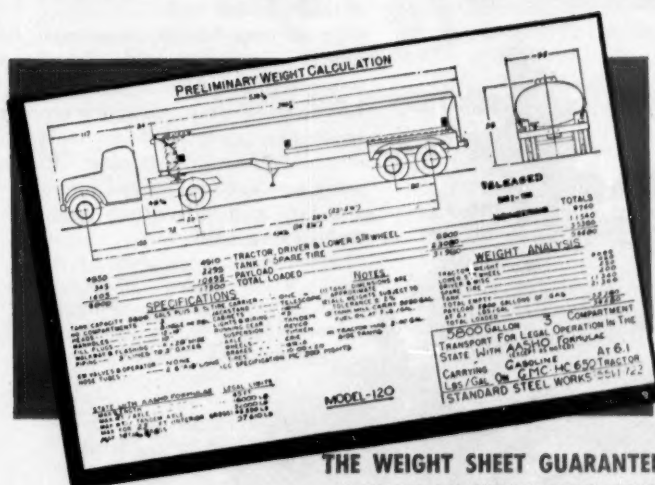
Pumps: Bar-Ray Products, Inc. (Brooklyn, N.Y.) is marketing a combination centrifugal-rotary-type pump. Fabricated from type 316 stainless steel, the unit is recommended for handling corrosive liquids. It is self-priming, rated at ¼ hp. and has a capacity of 6 gpm.

• No packing, high-speed valves and pulse-free flow are the features of the new proportioning pump Hills-McCanna Co. (Chicago) is offering. Designated the Hills-McCanna-Meter, the pump is a packless, positive displacement, enclosed unit, which will develop pressures to 2,500 psig. The pump meters quantities from 5 cc to 6 gal. per hour per feed, ranges in speed from 27 to 900 strokes per minute.

Control Engineering: Control Products Co., Inc. (Pittsburgh, Pa.), a newly organized firm, will enter the field of automatic controls. The firm plans to design and manufacture automatic control systems for the process industries. President of the company is Wallace Powell, formerly a control systems engineer with Jones & Laughlin Steel Corp.



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STANDARD STEEL guarantees a specific maximum payload on every delivery. The weight sheet guarantee (shown at left) is part of the order on every TRANSPORT delivered. It is your positive assurance of performance and load carrying specifications. It gives your guaranteed weight analysis of the unit, including tractor weight, lower fifth wheel, spare tire, tank, full load and driver — so that you can "load to the limit" and carry every drop the law allows for a full payload. It is, in essence, the blueprint from which your unit was fabricated — and a valuable document in governing the operating efficiency of each unit. Don't guess at the capacity you can carry. Don't leave part of a load behind. Base your hauls on the maximum load that STANDARD STEEL IS BUILT TO CARRY on every run! Another reason it PAYS TO GO STANDARD.

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Ethofat® 142/20 spreads oil blanket over mosquito larvae for maximum kill!

A continuous film of oil and insecticide will control mosquito larvae. But petroleum oils do not always form continuous films on water—they collect in small droplets. Armour chemists set out to find a chemical which would completely blanket breeding areas by spreading oil into a large, unbroken film.

Among the many chemicals investigated were the new Armour Etho-Chemicals (Ethofats, Ethomids®, Ethomeens®). Ethofat 142/20, one of these unique surface active agents, was found to be unusually effective. Used with kerosene and DDT, it gives a surface-oil continuity and a rapid spreading of the DDT solution. In actual larvicide tests, it formed continuous, uniform and stable films, penetrated biological films occurring on ponds—gave a maximum kill in only 45 minutes.

Oil-spreading is just one of the hundreds of industrial problems which are being solved by these new Etho-Chemicals. Another is in paper de-inking, where newsprint is reclaimed to permit its re-use. Ethofat 242/25 used in a reclaiming formula, gave a brightness of 10 to 15 points higher than other chemicals measured by the G.E. Spectrophotometer—a brightness increase you can see with the human eye!

In scouring, herbicide emulsions, hair oil, new furniture polish, leather treating, paints, wax—in countless fields, new Armour Etho-Chemicals have resulted in new products and profits to industry. Send for your copy of the new Etho-Chemical Booklet. It contains many new applications and formulas which can help you solve your problems with Armour Chemicals.





Armour stearic acids give freshness and longer life to all these products!

When a hand cream loses its freshness or a soap its fragrance, you can sometimes blame your sales loss to the stearic acid used in production. Stearic acids must remain stable during storage and processing in order for end products to remain fresh.

To help manufacturers keep their products fresh, Armour chemists have used an exclusive low temperature solvent crystallization process to produce two superior

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Armox® oils in lubricants solve cold weather and hot water problems!

Steam cylinders present two special lubrication problems. The first is due to cold weather which causes crystallization of stearines normally present in lubricant raw materials. This leads to sedimentation. As a result of requests by industry, Armour Chemical Division now produces an economical low pour oil—Armox LPO—which has an extremely low stearine content.

The second problem is that cylin-

der walls are continually exposed to hot water from condensing steam. Since steam cylinder lubricants are usually compounded with mineral oil which will not wet steel surfaces in the presence of water, Armour offers an acidless tallow animal oil—Armox ATO—which resists being washed away from metal.

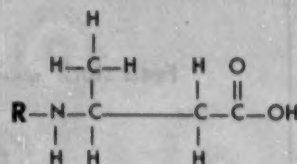
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ARMOUR CHEMICAL DIVISION

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New Ampholytic Surfactant

The Armour Chemical Division now offers in limited quantity N-Coco B-Amino Butyric Acid. This product is one of the comparatively small group of ampholytic surfactants which can act as either anionic or cationic agents. The structural formula shows that the compound contains both basic and acidic groups.



The internal salt (zwitterion) is supplied as a 50% water solution. By reacting it with organic or inorganic acids or bases, surfactants with a wide range of properties can be produced.

For example, the sodium salt of this zwitterion is an excellent suds promoter and foam stabilizer for synthetic detergents. It also provides added detergent properties. Formulation:

Alkyl aryl sulfonate	17%
Sodium salt of N-Coco B-amino Butyric Acid	4%
Sodium Tripoly Phosphate	45%
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Sodium Chloride	5%
CMC	1%

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- Ind. Oils: ☐ Armox LPO Sample
☐ Armox ATO Sample
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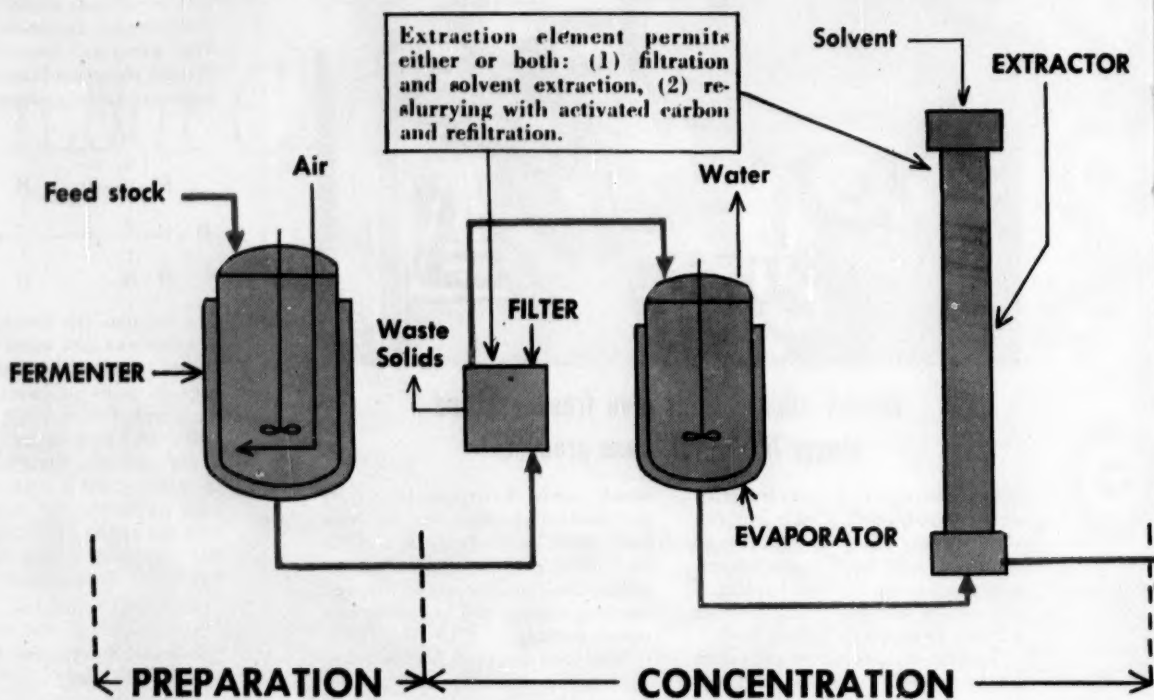
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HOW IT'S SET UP: Antibiotic Research



Volume Output: New Research Tool

Most research men are perfectly satisfied to watch their chemical progeny make the gradual ascent from test tube to tank car. But not so is a tight little band of European antibiotic probers, whose penchant for production has resulted in the construction of a new research center containing a full-scale fermentation plant.

Despite surface appearances this is the product of more than creative whimsy.

Behind the unusual move is a realistic plan for sharply accelerating the traditionally slow pace of antibiotic research and development. Architects of the speed-up scheme are guiding spirits of the Institute of Bacteriology at Liege, Belgium.

What they are trying to do is to foster the testing of experimental antibiotics on a scale far larger than that currently being utilized. In this way, they argue, evaluation time for new antibiotics may be reduced from

months, and even years, to weeks, and the chance of releasing a dangerous or futile antibiotic is reduced. The new center's director, Maurice Welsch, avers that the need for testing on a large scale has been made plain by past failures to predict side effects before an antibiotic has been released for general use.

Unfortunate incidents of this kind are the exception rather than the rule, are never the result of laxity on the part of medics or drug firms. But they have occurred; and in some cases long after the construction of plants for full-scale production of the bulky material.

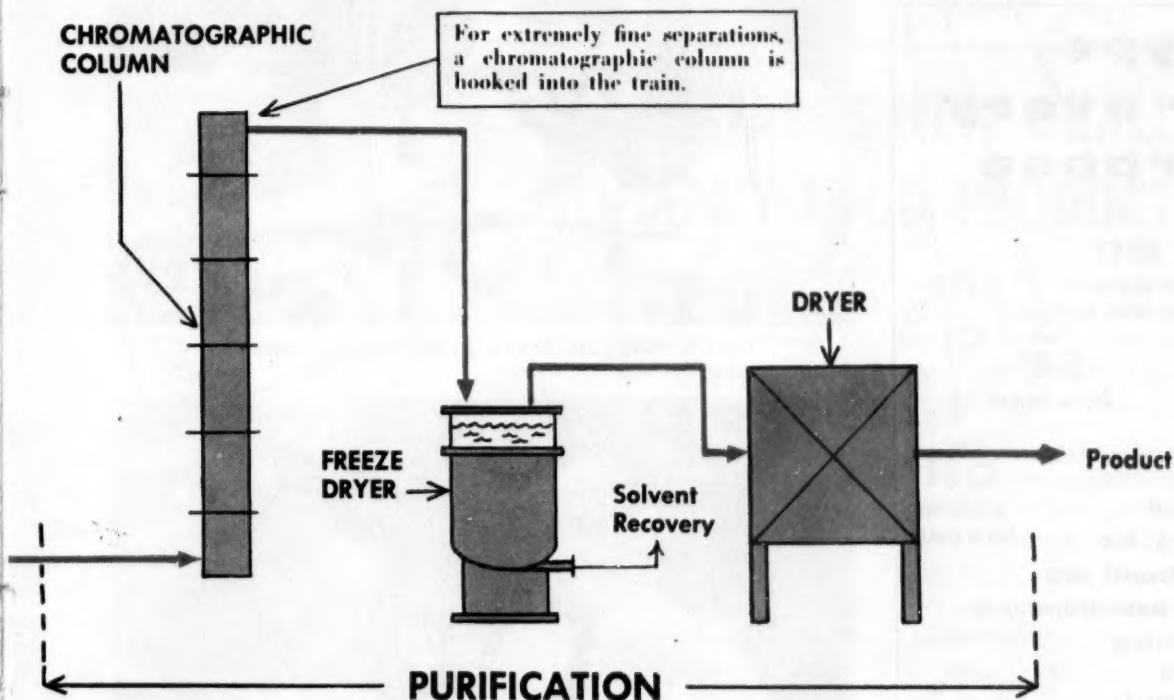
Large-scale testing calls for wholesale lots of the experimental substance—and that's where the center's fermentation plant comes in. Engineered by Scientific Design Co. (New York) and built by Etudes et Recherches Industrielles (Brussels) with funds pro-

vided by the Belgian Ministry of Health, the plant is considerably bigger than any comparable setup.

No Diversion: In a field where miniature facilities are the rule for experimental output, the Liege installation's 500-gal. fermentation tanks are real eye-openers. This equipment, moreover, is used only for production of test antibiotics, never for manufacture of commercial drugs.

Size is not the only distinguishing feature of the new research plant: It also shelters a process that is highly flexible, adaptable to the production requirements of a potential plethora of fermentation end products. Equipment, comprising the process's main elements, may be readily bypassed in the train, and operated independently. Particularly valuable in extraction operations (*see flow sheet*), this facility is the key to the process' versatility.

Center's Factory Within a Lab



Credit for the engineering job belongs chiefly to Scientific Design's Harry Peters, who got additional kudos for keeping within a 1949-pegged budget of \$250,000. To keep under this figure, equipment purchasers scoured the European continent for good buys. The installation's replacement cost at today's rates—according to Scientific Design—would be about \$500,000.

In operation only a very short time, the new research center already is beginning to fulfill its promise. On the laboratory side it's in the thick of studies on Iturin, a new antibiotic that shows promise in combating fungus infections. The production plant, moreover, is straining for an opportunity to put teeth into several upcoming test programs.

Equally eager to put the process on-stream is plant director A. L. Delcambe, who wistfully relates that a six-month fermentation job he did for his Ph.D. thesis could be polished off in one week with his present tools.



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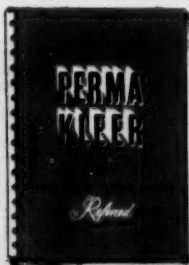
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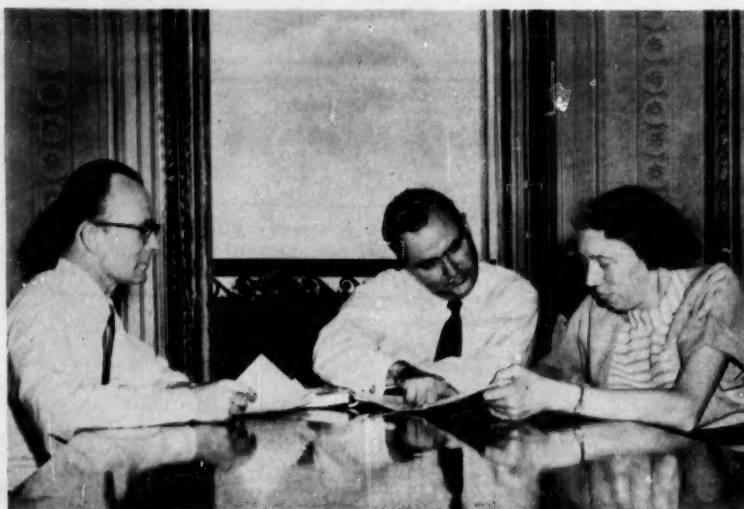
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RESEARCH



CBCC'S WOOD, HEUMANN, GEER: Their deliberations . . .



. . . provide the spark for mechanical fact-finders.

How to Bypass the Lab

If you're tackling a problem in insecticides, fungicides, plant-growth regulators, or any other area of chemical-biological activity, the National Research Council's chemical-biological coordination center (CBCC) can help you save lab time and money. This week, the center crosses the threshold of its ninth year; during its existence it has supplied scores of firms with concrete data on the biological activity of a host of chemicals.

For example, it probably can tell you whether a given substance is a mould-inhibitor, has antibiotic activity, or looks like a promising insecticide—and, in the process, eliminate

the need for much tedious and time-consuming screening work.

The center has answered (free of charge) such improbable questions as "What morpholine derivatives inhibit the growth of bean plants?" and "What chemicals in smoke screens are likely to harm human beings?" About 40% of its queries have come from private industry.

A well-conceived and well-organized data system is the key to CBCC's success in providing money-saving answers. A pioneer in mechanized literature-searching, the center is thought to be the most complete compendium of its kind in the world. Its



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Renex 20 is a 100% active liquid, a polyoxyethylene ester of mixed fatty and resin acids; has low foaming index and high detergency. It is well adapted to compounding cleaners for automatic dishwashing and home laundry . . . also for floor and wall cleaners, metal cleaners, and specialty cleaning products. It has good anti-dusting action. Also useful in textile scouring, paper re-wetting, desizing and similar industrial cleaning and penetrating compounds.

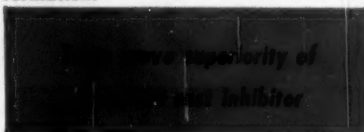
Renex 25 is a dry, free-flowing powder, a concretion of urea with Renex 20. It provides the low foaming and detergency qualities of Renex 20 in a form convenient

for powder formulas. Excellent for cotton detergents, in hard and soft water.

Renex 30, a 100% active liquid, is a polyoxyethylene alkyl ether, with high foaming index. Its high stability to acids and alkalies makes it particularly applicable to dairy cleaners, detergent sanitizers, felt cleaners, home dishwashing compounds and metal cleaners. It has excellent wetting and penetrating qualities useful in industrial cleaning compounds.

Renex 35 is a solid powder, a concretion of urea and Renex 30. It has high detergency in hard or soft water, and superior stability to acids and alkalies . . . in a form that facilitates preparation of powdered compounds.

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Atpet 100 averaged well over 500 hours . . . considerably surpassing the 336 hours required by the specification for aircraft engine preservative oils. Satisfactory pro-



tection was noted in certain oils containing only one per cent Atpet 100 by weight.

Hydrobromic acid tests, indicative of performance in a lubricating oil, showed consistently uniform protection from oils containing additive from several different batches of Atpet 100. Static water drop tests and turbine oil rust prevention tests further substantiate the application of this additive as an inhibitor in slushing oils, turbine oils and fuel oils.

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SAFE POWDER BLEACHES, the popular new domestic bleaches, depend on perborate for their effectiveness. They may contain either form of sodium perborate and can be used on all types of washable fabrics, white or colored. And "Perdox" is the active ingredient in the new dip-type stain removers for plastic ware. Here are some other uses:

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FOR "PERDOX" AND TETRAHYDRATE

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RESEARCH

files comprise over 750,000 cards, concerning more than 53,000 chemicals, coded and punched to permit rapid mechanical sorting.

Director of CBCC is youthful (33) chemist Karl Heumann. His staff includes experts in entomology, plant sciences, physiology, pharmacology, and microbiology. The two major groups, chemistry and biology, are headed up by key-staffers Harriet Geer and G. Congdon Wood, respectively. One big task has been to develop and apply the various codes (there are 10 of them) currently used in filing data.

In addition, questions based on the filed material are promptly answered. Rounding out the staff's chores is the supervision of a screening program to provide data on the biological effect of hundreds of compounds a year. Thirty-five nonprofit institutions and a number of companies cooperate in this testing work.

Lots of Help: Industrial firms that have submitted compounds to CBCC for screening span the alphabet (e.g., Abbott, Columbia-Southern, Davison, Koppers, Minnesota Mining, Rohm & Haas, Virginia-Carolina), include even nonchemical companies, e.g., National Cash Register Co.

But right now the flow of information is largely unidirectional. Although industrial organizations haven't stinted on providing compounds for screening, they have provided very little hard data for CBCC's hungry files.

Heumann, while conceding that some of this data is necessarily secret, would like to see more privately held data of nonconfidential nature included in his files. And there's no denying that the more assistance the center has in approaching its ambitious task (there are more than a million known chemicals), the greater the service it can render to the chemical industry.

Three-Way Deal: Monsanto has joined hands with Fulton Bag & Cotton Mills (Atlanta) and the Institute of Textile Technology (Charlottesville, Va.) in a new venture designed to yield the facts on cyanoethylation of cotton (CW, Sept. 12, '53, p. 40) and subsequent utilization of the modified fabric. Monsanto reports that lab-scale process studies are nearing completion and an experimental production unit is slated for installation at Texas City in the near future. Output of cyanoethylated fabric will be taken by Fulton for extensive field evaluation.

Cyanoethylation, developed at the Institute of Textile Technology, hinges on the treatment of cotton

with acrylonitrile. Resulting fiber is alleged to be superior to cotton in dye acceptance, resistance to heat, flame, mildew and abrasion.

Isotope Offerings: Two companies are out with new radioactive tracer chemicals:

- Bio-Rad Laboratories (Berkeley, Calif.) is turning out research quantities of three carbon-14-tagged amino acids: DL-norleucine, and DL-norvaline labeled in two specific positions. Major applications are in biochemical investigations.

- Dajac Laboratories (Leominster, Mass.) is featuring heavy water containing oxygen-18. Also intended for biochemical researchers, the new product is said to be the most concentrated material of its kind currently available.

Titanium Boost: A new titanium alloy, reportedly lighter and stronger than any of its commercial counterparts, has been developed by Armour Research Foundation (Chicago) for the Ordnance Corps. Although the composition of the new alloy is a secret, it is said to be 40% lighter than high-strength steel and about 42,000 lbs./sq. in. stronger than commercial titanium alloys. Being eyed for use in the manufacture of heavy weapons, the high-strength alloy's possibilities in structural components and aircraft engines have sparked interest.

Fluid Cracker: Laboratory samples of a new high-alumina fluid petroleum cracking catalyst are available from American Cyanamid Co. (New York). Offering a 25% (by weight) alumina content (compared with 13% normally found in synthetic catalysts), the new product, according to Cyanamid, offers these advantages over competing materials: greater stability of catalytic activity; a 15-25% higher equilibrium activity; lower stack losses; and, in some cases, improved selectivity of end-product distribution.

Quantities of the fluid catalyst, produced at the company's Fort Worth plant, have undergone a year-long test at a major refinery.

Info Center: By the terms of a new agreement with Atomic Energy Commission, Stanford Research Institute (Stanford, Calif.) becomes one of three national depositories of unclassified industrial atomic energy information. Stanford will receive reports of special industrial interest as they become available, will (for a nominal fee) copy and circulate such information. The two other depositories

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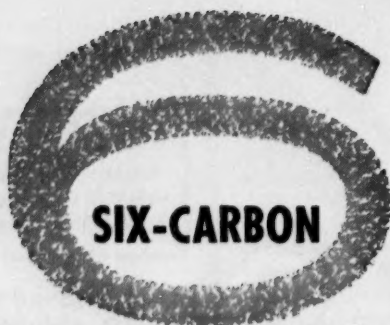
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RESEARCH

are to be maintained by the Atomic Industrial Forum (New York) and the John Crerar Library (Chicago).

Aiming at Industry: Plans for the newest link in the Du Pont research chain were revealed recently by the company's textile fibers department. They revolve around a proposed new laboratory to be devoted exclusively to industrial products. As a start in this direction, new industrial uses will be sought for the company's line of synthetic fibers. But the possibility of developing new fibers for special industrial applications is reportedly not being overlooked. The new facilities are slated to take over 15,000 sq. ft. of space in existing textile research laboratories at Newport, Del., are now housed at Du Pont's Chestnut Run textile research laboratory.

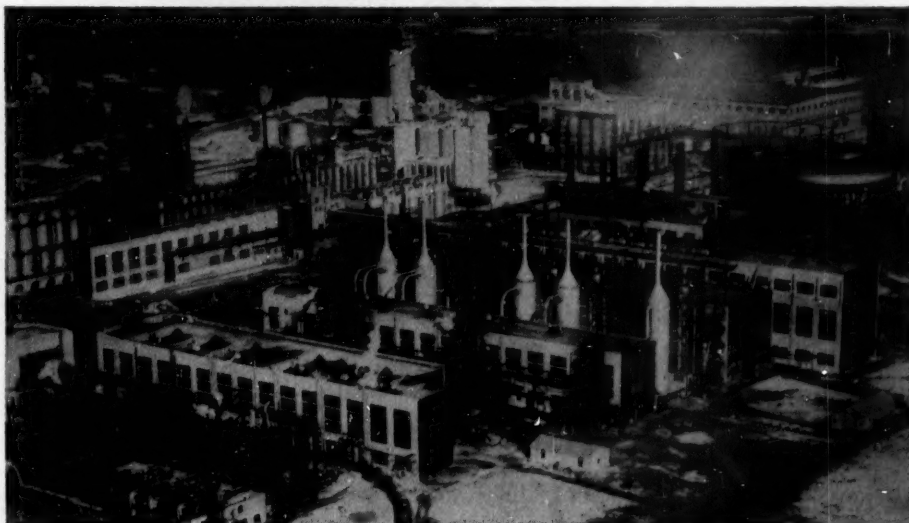
Double Duty: Making its debut on the apparatus scene is a new 400-watt ultrasonic energy generator out of Rich-Roth Laboratories (Hartford, Conn.) Equipped with a variety of transducers, the equipment may be put to such uses as degassing, degreasing, depolymerizing, dispersing, emulsifying, extracting, impregnating, coagulating. According to Rich-Roth the machine is the first ultrasonic energy source suited equally for laboratory or plant utilization.

Available: A sprinkling of chemical inventions are included in the government's new offering of patents on which licenses (ordinarily nonexclusive and royalty-free) are available.

Among the most interesting from an industrial standpoint are:

- 2,678,926, which details a method of preparing dialkyl phenothiazine sulfones by oxidation of the corresponding dialkyl phenothiazines with hydrogen peroxide and acetic acid. The product is precipitated by adding water. (Administered by Patent Counsel, Navy Dept.)
- 2,678,946, covering the preparation of explosive nitroxyalkyl nitramines by the reaction of a secondary amine with nitrous acid, then dehydrating with an acid anhydride. (Administered by Patent Counsel, Navy Dept.)
- 2,678,949, on a technique for the production of alkyl-substituted amine borines. According to the patent, a quaternary ammonium borohydride is heated to form a vapor that decomposes to an alkyl-substituted amine borine and a hydrocarbon; product is obtained by condensation from the vapor. (Administered by Patents Branch chief, Atomic Energy Commission.)

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WITH WILL

- You choose your own executor and trustee.
- You choose the guardian for your children.
- You save your estate the cost of surety bonds.
- You can direct how your estate is to be distributed.
- You may direct how your children's funds are to be invested and used.
- Your business interests may be retained for the family, if desired.
- You can take all steps necessary to minimize and avoid taxation.
- You can arrange to avoid a second tax on your wife's estate.
- If a holder of stock in a closed corporation, you can fix its value for estate tax purposes.

WITHOUT WILL

- The court appoints an administrator but there can be no trustee.
- The court appoints a guardian.
- Your estate must pay for surety bonds.
- Your estate is distributed in accordance with the law.
- Children's funds must be invested in legal investments; held until age 21 except on court order.
- Business interests may have to be liquidated.
- Your survivors can do nothing to minimize or avoid taxes.
- A second tax on your wife's estate is unavoidable and may be larger than the original tax.
- Costly litigation may be necessary to determine its value.

Mapping Out the Future

Laboring under a tax load now that keeps him sweating, the average chemical specialties maker seldom gives much thought to what might happen to his firm upon his death.

Frequently a one-man show, or perhaps a partnership, a successful specialties firm can be severely jolted when the owner or a partner dies.

That's why more firms are studying estate planning—to keep a lifetime's hard-won business from being swept away, and to best look after the families for whom it was built.

Many's the chemical specialties maker who'd like to be on vacation this week. Many's the specialties maker who cannot be spared from the business he's taken a lifetime to build up, because his small proprietorship is virtually dependent on his close direction. Few are those who've given much thought to what might happen to their businesses—and to their families dependent on that business—should they die.

The taxes that seem so troublesome now, though, aren't half as trying as those that might arise when an estate is being settled. But care in planning for the future—estate planning—can ease this burden greatly. In the past few years, more men who have built up small business have foresightedly laid plans to keep their firms intact, their families protected from legal tangles of death settlements.

In just the past few months, oil

companies and auto makers have urged their jobbers to investigate estate planning. They're motivated largely by a desire to maintain strong dealerships. The specialties manufacturer, though, seldom has the spur of a future-thinking corporation to help him face the facts of estate planning.

Four to Remember: Advice on estate planning can be obtained from almost any banking house or insurance firm. Oil companies, for example, turned to Provident Trust Co. (Philadelphia) for aid. Here are four of the basic points stressed:

- Don't rely on the law, for it's not designed to look after your particular business. To illustrate, when you fail to write a will, the law appoints an administrator of your estate who is usually forced to liquidate quickly regardless of what may be advisable under the circumstances.

- Even if you want your business sold, give your executor and trustees power to continue it, if only for a short period. It may take time to make a profitable sale.

- Avoid mandatory directions in your will on the management or disposition of your business. For example, don't insist that your business be retained as long as your son lives. The law will enforce such a direction, though it may not turn out to be wise.

- When there are co-owners of your business, arrange "buy and sell" agreements now for the handling of your interests and theirs as each owner dies. Even if your affairs are in order, lack of foresight on the part of your partners or fellow stockholders can have an adverse effect on the business when they die. Partnerships, for instance, automatically dissolve upon the death of a partner when there is no agreement to the contrary.

Course of Events: While there is no law to make a man sit down and draw a will, laws do control his property if he dies intestate. Here's what could happen to a specialties maker who hadn't gotten around to making a will.*

Roy Peterson is 50, married with two children under 21, a son and a daughter. He started an auto special-

* It's assumed he lives in a common-law state, which is any of the 48 except the community-property states of Arizona, California, Idaho, Louisiana, Nevada, New Mexico, Texas and Washington.

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LESSONS IN SAVINGS

An estate left to the wife outright means an eventual duplication of tax burdens on the estate going to the children—

	ESTATE (After Debts)	FIRST TAX	SECOND TAX	TO CHILDREN
OUTRIGHT WILL	\$100,000	\$ None	\$ 4,800	\$ 95,200
	150,000	1,050	17,606	131,344
	200,000	4,800	31,260	163,940
	500,000	47,700	111,236	341,064

Much of the expense of this double tax can be avoided by willing $\frac{1}{2}$ or less to the wife outright. Rest is in trust for the children; trust fund income goes to wife.

	ESTATE	FIRST TAX	SECOND TAX	TO CHILDREN	% SAVED
TRUST WILL	\$100,000	\$ None	\$ None	\$100,000	4.8
	150,000	1,050	1,050	147,900	11.0
	200,000	4,800	4,800	190,400	13.2
	500,000	47,700	47,700	404,600	12.7

ties business with hardly any capital 25 years ago. Today the business is worth somewhere around \$200,000.

Like other men in growth industries, Peterson's been so pressed by everyday problems, he hasn't actually thought too far ahead. Assuming he died tomorrow, what would probably happen?

One third of his business would go to his wife and the other two-thirds to his children in equal shares. Because no executor had been chosen, the court would appoint an administrator who would have to put up a bond with surety at the expense of the estate.

There would be a forced liquidation of the business, and guardians would be appointed for the children. This would involve court proceedings, a surety bond, and court supervision of the children's interests.

Better Plan: A simple will, leaving everything outright to his wife, is not the wisest move Peterson can make. Estate planners point out that when a man leaves his estate outright to his wife, he is subjecting it to an unnecessary duplication of taxes at his wife's subsequent death.

The first thing explained to Peterson was marital deduction. According to the federal law, a married man can leave approximately one-half of his taxable estate tax-free to his wife, providing this passes either outright or in such a manner that she controls the principal during her life or by her will at death. Any property going outright

to Peterson's wife in excess of that amount will be taxed in Peterson's estate and again at his wife's subsequent death at a much higher rate.

Half In Trust: But the second tax at Peterson's wife's death can be avoided by his making a will in which he provides that this one-half be placed in trust for his wife. She will receive income from it during her life and at her death the principal will pass tax-free for the children's benefit without being subject to her control.

(This arrangement was made possible by The Revenue Act of 1948. One approach of persons experienced in estate management—insurance underwriters, tax accountants and tax lawyers—is to ask "Have you revised your will since 1948?" Usually they find the individual questioned has no will at all—one estimate reports only about 5% of the total population has taken the trouble to write wills.)

Broader Aspects: But estate planning involves more than recommendations on what should go into wills. Fundamental to any discussion on the subject is the question: Should a business currently being run as a proprietorship or partnership be turned into a corporation?

In some cases, incorporating may mean lower taxes† To determine

whether incorporating would save money, a business owner should have his accountant calculate what his income taxes would have been during the past several years if his firm had operated as a corporation and he had been paid a salary commensurate with his average yearly withdrawals.

Yet even when there is no income tax saving, incorporating should be considered by anyone wishing to perpetuate his business. Explanation: a corporation is a permanent entity, a proprietorship or partnership is not.

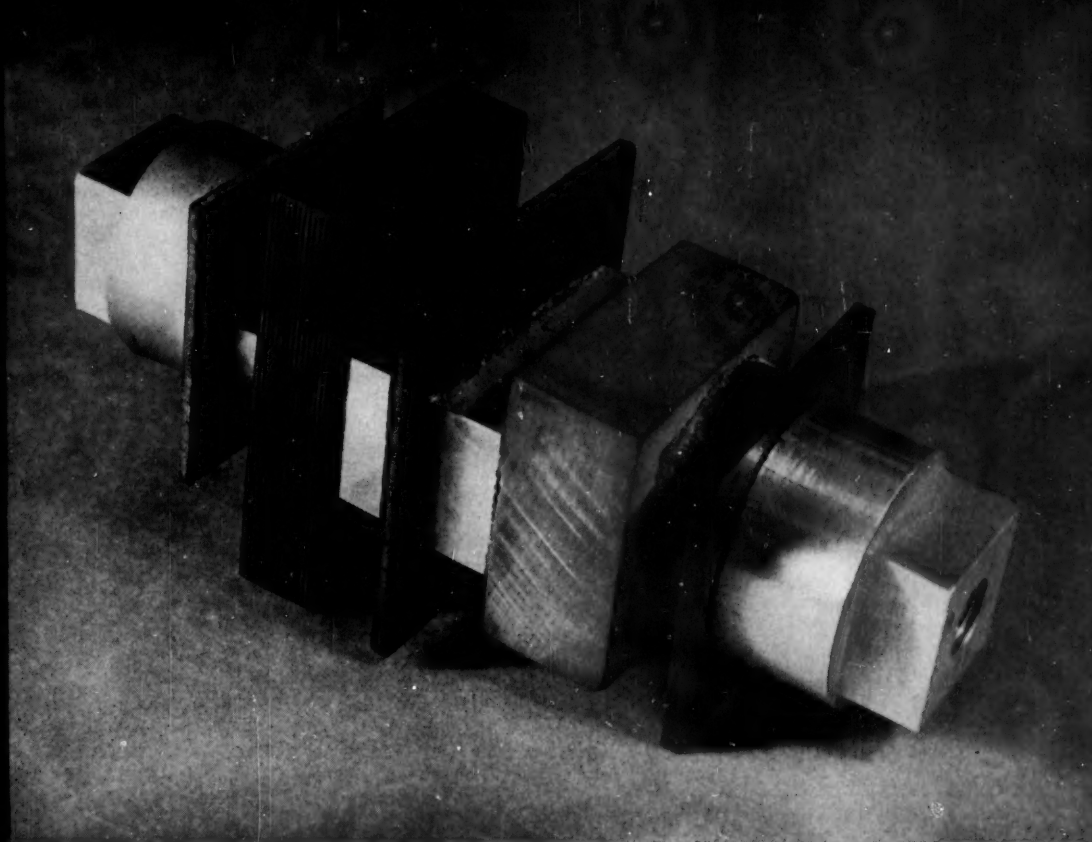
Joint Ownership: One thing estate planners stress is that a business is likely to run into trouble after a death when it is jointly owned—often the owners are husband and wife. So far as the federal law is concerned, there is no tax-saving obtained that cannot be better obtained by registering the business in the sole name of the owner and having it subject to the terms of his will. (Joint ownership presents the same disadvantage as leaving your property outright—double taxation.)

The organizations with the biggest stake in estate planning are insurance companies and banks. The latter find it worth their while because of the trust angle.

As for the insurance representatives, they've learned they have a better chance of selling policies (and often larger policies) if they can get a business owner to think realistically about what's likely to happen when he dies.

The initiative may also be taken by

† Taxes haven't always been the problem they are today. Back in 1929 a family of four paid an income tax of \$40 on a net income of \$10,000. Last year it was \$1,774. The federal estate tax on a \$200,000 estate rose in the same period from \$1,500 to \$32,700.



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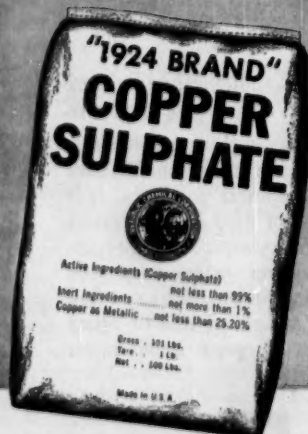
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SPECIALTIES

a tax attorney or a tax accountant. As it turns out, a person deciding what will become of his property needs advice from all these parties. With so many people bent on forcing the business owner to face the facts of life, the average specialties maker is going to find it harder to procrastinate in his estate planning.

Cosmetology Exchange

A cooperative, industry-university seminar on cosmetic science will be the feature of the September meeting of the Society of Cosmetic Chemists, Sept. 23-24 at the New York Academy of Sciences (New York City). Hope is it will provide a long-needed basic cosmetic sciences discussion forum.

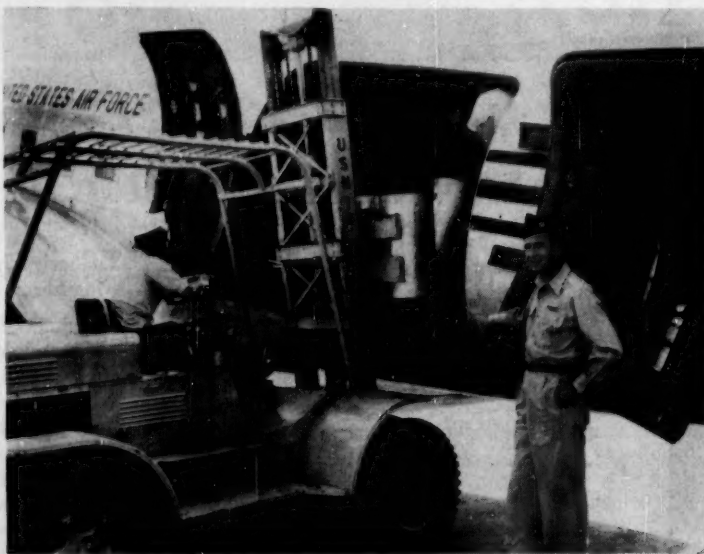
Members of the research and teaching staffs of New York University, New York Medical College, Rensselaer Polytechnic Institute and Textile Research Institute will cooperate with chemists from Atlas Powder Co., Hazelton Laboratories, and Rayette, Inc. Subjects to be discussed: Animal and Human Testing of Cosmetics; Emulsions in Theory and Practice; Hair Structure in Permanent Waving.

Aerosol Pioneer

Climbing up a mountain of aerosol products that grows steeper every month, makers of the push-button products have understandably lost track of the beginnings of their venture. Last week, CW stopped for a talk with Charles Gebauer, the vigorous octogenarian who has been pressure-packing with halogenated propellants for half a century, using glass containers for them for over 15 years.

Specializing chiefly in medical products, Gebauer has limited his firm to a size he can manage handily, kept his line confined to products he can promote inexpensively. At that, in 54 years, his ethyl chloride anesthetics, tannic-acid burn sprays, and athlete's foot remedy, packaged in his Dispenseal units, have become standard products in the medical profession.

Gebauer hasn't slowed up because of his age, either. He's already successfully test-marketed a Dispenseal shampoo, and is working on a colloidal graphite spray for locks. All depends, Gebauer says, on whether he wants to set up the promotional or-



Airborne Countermeasures

AIRLIFTING insecticides to plagued areas is getting to be regular procedure.

Example: just last week a U.S. Air Force C-47 flew a supply of Toxaphene to Minnesota to combat an armyworm invasion. Gov. Elmer Anderson proclaimed a state-

wide emergency when the pests threatened flax, corn, and small grain, and the Air Force rushed in the chlorinated insecticide from a Hercules depot in Brunswick, Ga. In time, too—authorities say fully 50% of the crop might have otherwise been lost.

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SPECIALTIES

ganization to go ahead with such items.

Legal Start: Gebauer slipped into the specialties business in a round-about way. A Lutheran minister's son, he was a practicing lawyer (Indiana, class of '95) and a soldier (Spanish-American War) before he joined his chemist brother in manufacturing ethyl chloride in 1900. At that time, it was widely used as a local anesthetic.

His brother died a short time later, and Charles Gebauer bought out his widow, incorporating in 1904 as Gebauer Chemical Co. in Cleveland. By then he had a metal dispensing tube for ethyl chloride—a unit that could release the contents as a spray or jet as the user desired. It was the only Gebauer product for a number of years.

In the late '30s, Gebauer hit upon some other uses for his ethyl chloride, which, of course, can be used as a solvent for a variety of compounds. His first product of this sort was a tannic-acid spray for burn treatment.

Pressure-packaging wasn't the only novelty of this product. It was packed in an amber glass bottle. A special, patented flute-clamp valve was devised, which gave an adjustable spray (Gebauer's patented Dispenseal unit) when the bottle was necessarily inverted for use. The unit has an internal pressure of only 4-5 psi., although the container is said to be capable of withstanding up to 80 psi.

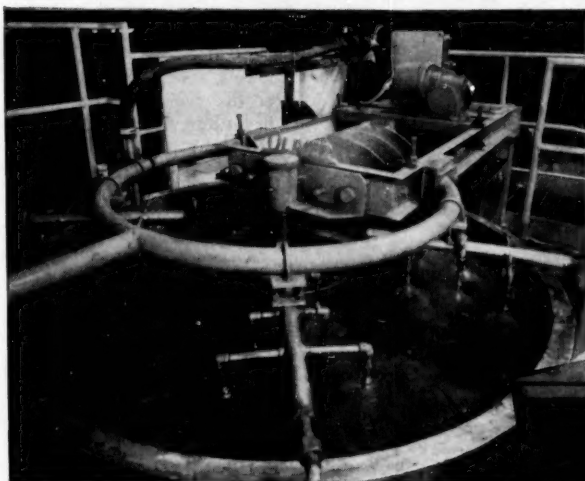
Advertised only in medical journals (as are all his products), the tannic spray found a ready market. Other products soon joined it—P.M.C. Spray for treatment of athlete's foot; S.S. Spray, a soapless detergent for surgical use; Alco Spray, an adhesive tape and plaster remover; and Elfa, a body deodorant. All are now sold nationally through physicians and medical supply houses. Sales are through commissioned representatives.

No Tangles: Gebauer has carefully stayed out of legal tangles that might involve his pressure products. Back in 1912, he had a long fight with General Electric over tungsten carbide tools. After years of unsuccessful suits, during which his two patent lawyers died, even the lawyer in Gebauer's make-up soured toward the squabble, and he's tried to steer clear of such entanglements since.

What about the future of aerosols? Gebauer is a bit leery of one of the hottest items right now, the shave lathers. He thinks the defatting effect of the detergents in them may eventually prove their undoing.

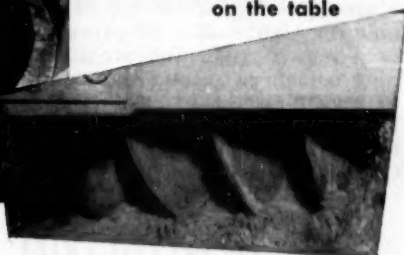
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SPECIALTIES

his family own almost entirely, he won't give out sales figures. But he seems to have no doubts about its future. He's working on some new products, has others up his sleeve. And some day, he concedes, he'll have to start thinking about training someone to run the business. But right now, he's in no hurry.

Dirt Dispellor: Wisk-O-Pad, Inc. (New York) has developed a consumer product for the removal of surface dirt from apparel. It's a laminated wool pad with a rubber base and chemically impregnated to retain the dirt, is said to remove lint, face powder, dust, animal hairs from many types of fabrics and suede. It will retail for 49¢.

Cleaners' Special: Eaton's AGX Stain Remover is a new dry-cleaners' compound for removing silver stains caused by photographic developing solutions, medicinal preparations like Argyrol, etc. AGX is made by the Laundry and Dry Cleaning Div. of Eaton Chemical and Dyestuff Co. (Detroit).



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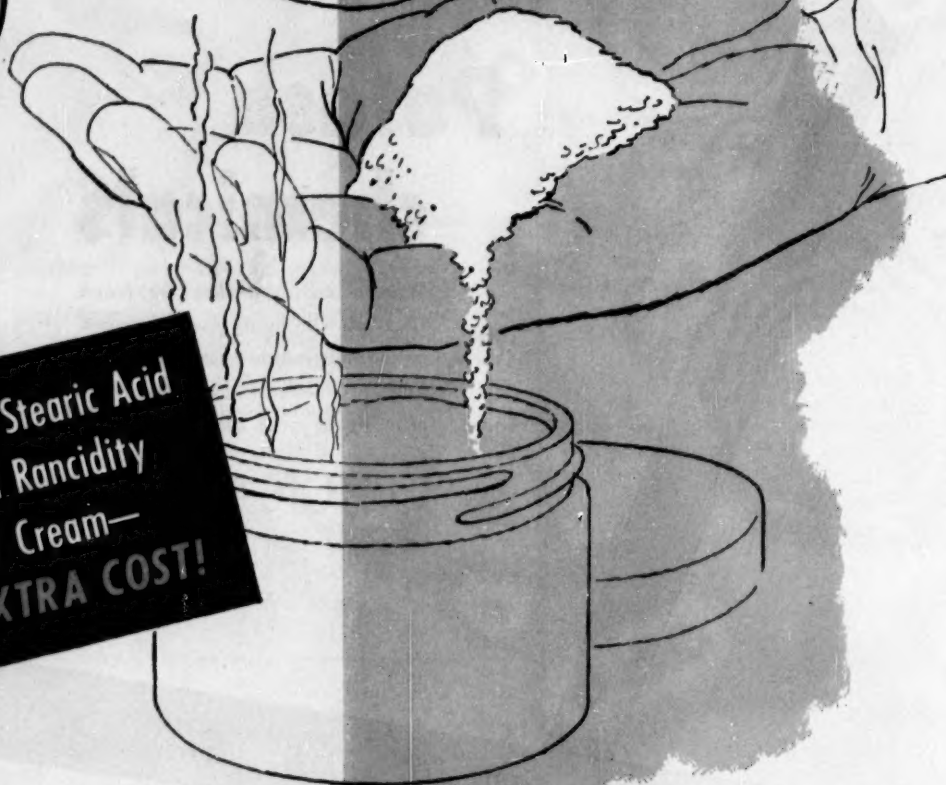
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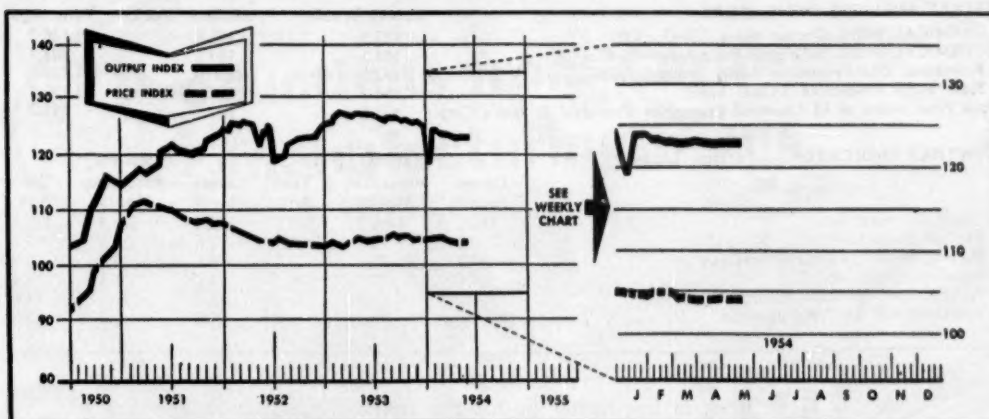
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MARKETS



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
 CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

Less noticeable than straws but evident nonetheless are signs in the wind of a gentle renewal of marketing activity. Chemical plants—some after summer closings for vacations and repairs—are slipping into gear, preparing for brisk fall business.

For instance, glycerine sales are perking along now more than they have been—and demand, over the past few weeks, has been surprisingly good for this usually slow period of soapers' shutdowns. Refined stocks are easing off satisfactorily—due in part to some sizable exports.

Shaping up in the background, however, are significant foreign factors that may soon bring about some changes in the crude glycerine market. The material is still not too abundant, worldwide; consequently prices remain high—too high, in some cases, for economical refining either here or outside the country. Hence, overseas customers are buying refined glycerine rather than crude to refine themselves—it's actually cheaper that way.

Thus if the practice continues, price of crude may be pressured downward as the material becomes more available. Don't look for any drastic alterations in refined (synthetic or natural) glycerine prices though: chances are they're pretty well pegged at 30¢/lb. (tanks)—at least for as long as stocks continue at healthy levels.

On the other hand, there's some question about the state of the urea market. Despite published reports about the currently unsettled conditions due to the influx of lower-priced imported material, one major urea maker tells CW there's nothing new in the situation. Foreign shipments to this country aren't getting stronger, but the import impact is being more keenly felt today because of the current slowdown in demand for urea from some consuming industries (e.g., adhesives).

Big-time urea makers, though, have by now gone along with the freight equalizing (at some ports), which in effect does cut the cost to consumers.

MARKET LETTER

WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	123.1	123.3	126.0
CHEMICAL WEEK Wholesale Price Index (1947=100)	104.2	104.2	104.7
Bituminous Coal Production (daily average, 1,000 tons)	1,172.0	1,200.0	1,529.0
Steel Ingot Production (1,000 tons)	1,544.0 (est.)	1,532.0 (act.)	2,119.0
Stock Price Index of 13 Chemical Companies (Standard & Poor's Corp.)	323.5	324.5	244.2

MONTHLY INDICATORS—Foreign Trade

(Million Dollars)	Exports			Imports		
	Latest Month	Preceding Month	Year Ago	Latest Month	Preceding Month	Year Ago
Chemicals, total	\$86.6	\$103.2	\$71.7	\$22.6	\$26.8	\$27.6
Coal tar products	6.3	8.8	4.9	2.6	3.3	4.2
Medicinals and pharmaceuticals	21.0	27.2	20.2	0.6	0.7	0.5
Industrial chemicals	14.4	14.1	9.5	4.3	5.3	6.4
Fertilizer and fertilizer materials	4.1	4.2	3.2	12.2	15.1	14.0
Vegetable oils and fats, inedible	5.2	5.3	1.7	4.8	8.0	10.5

More urea is beginning to hit the market. Last week the first dribble came out of Allied's Nitrogen Division's new plant at Omaha. (Earlier this year the ammonia facilities went into operation.) There's no word of specific production data, but the \$25-million installation is designed to produce and ship 61,000 tons/year of nitrogen products.

In the feed arena, too, urea is involved in some marketing moves: some contracts are being signed. Observers, however, are showing concern about future availability. Feed-grade urea is, of course, partly guided by supply/demand of protein oil feeds (principally cottonseed and soybean meal); when these items are short, urea sales zoom.

These two factors loom:

- Cotton is scheduled to be cut back from 16 to 12 million bales, which will result in about a 25% reduction in cottonseed meal.
- Although the estimate on soybean planting was a near 340 million bu., the current widespread drought in the soybean belt has scaled down earlier expectations.

Thus the probability of less meal heightens the possibility of an upcoming run on urea for feed.

News that Du Pont is eyeing a California site for a plant to produce tetraethyl lead (TEL) and "Freon" refrigerants underscores its optimism in expanding commercial markets, especially for the latter products. Though the company hasn't decided definitely what Freons will be produced there, it's more than a good guess that Freon 114 is meriting thoughtful attention.

That's the low-pressure propellant in which the Atomic Energy Commission last year showed a heavy interest (CW Market Letter, Aug. 22, '53), at one time siphoning off most of Du Pont's Deepwater Point, N.J., and East Chicago, Ind., output. But liberal relaxing of AEC's long-term demand plus capacity additions (CW, July 10, p. 16) aren't enough to satisfy the clamoring commercial demand.

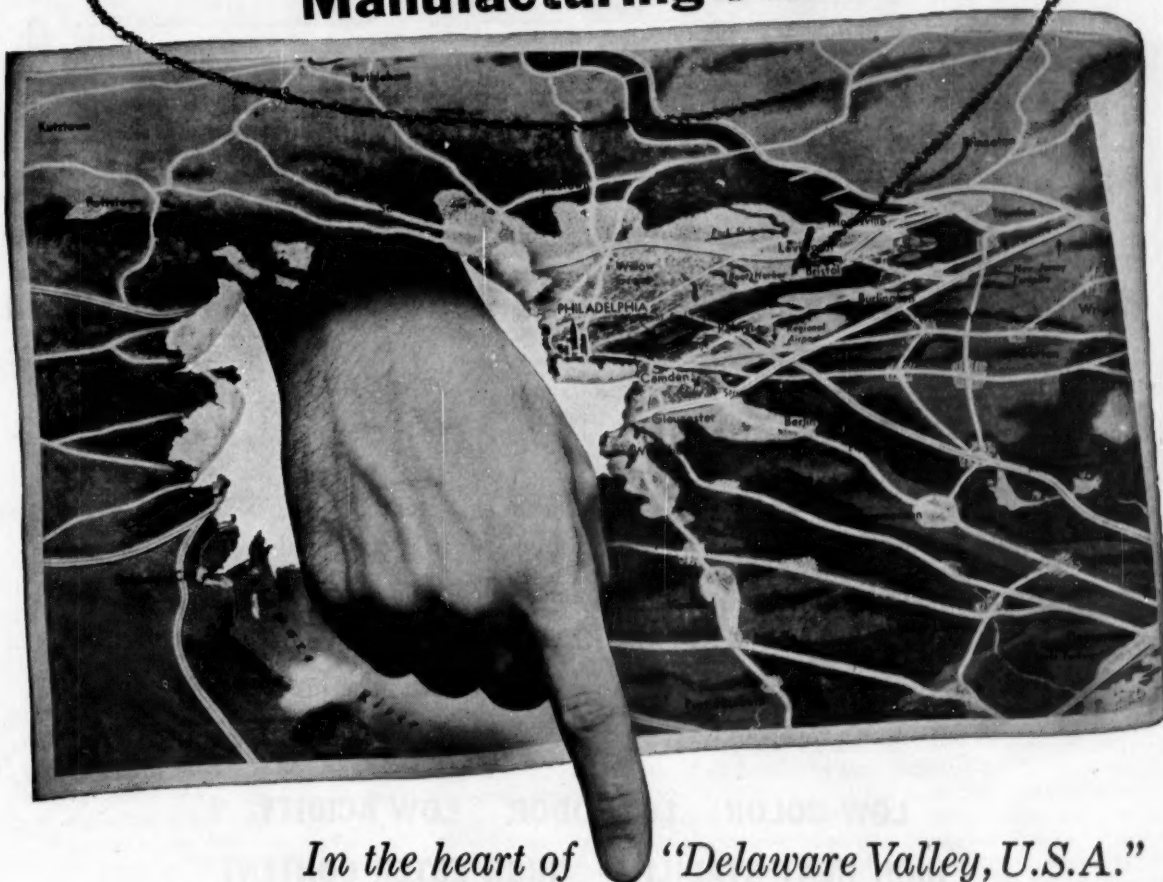
Result: the new multimillion-dollar installation—first major Du Pont plant in California. (It now has a small paint factory near San Francisco).

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending August 2, 1954

UP					
	Change	New Price		Change	New Price
Eugenol, USP, Bots.	\$.20	\$2.90	Superfine, bgs., 10-bg. lots	\$.01	\$.48
Shellac			TN, bgs., 10-bg. lots	.01	.47
Lemon, No. 1, bgs., 10-bg. lots	.01	.52			

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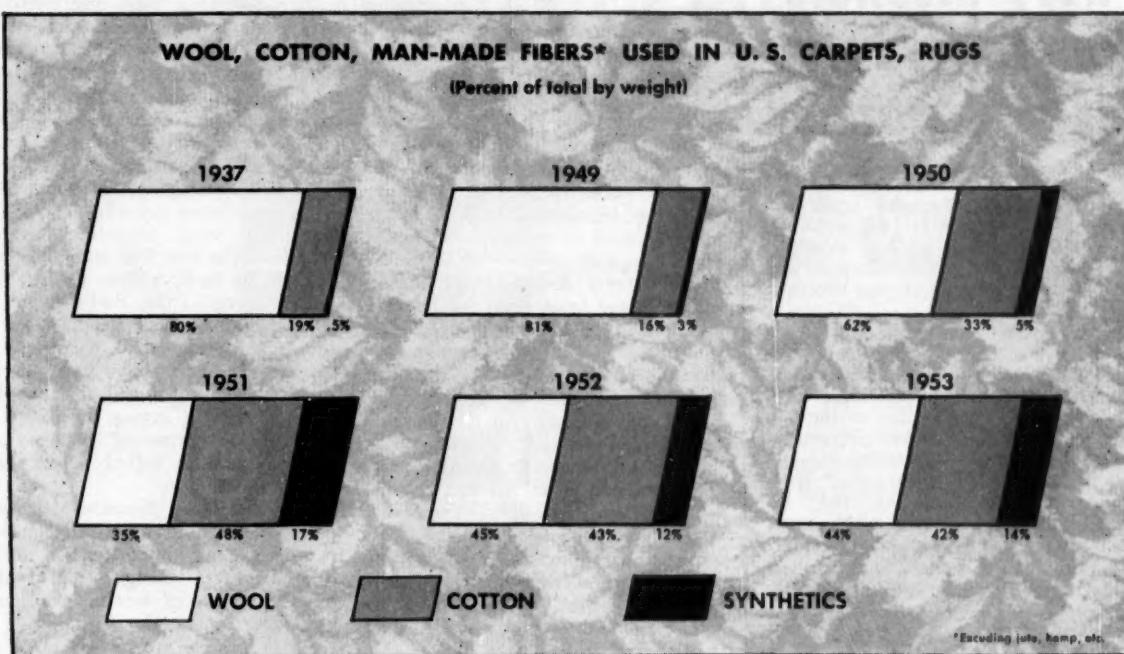
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WOOL, COTTON, MAN-MADE FIBERS* USED IN U. S. CARPETS, RUGS

(Percent of total by weight)



Rayon Rugs Cushion Chemicals

A trend within a trend in the rug and carpet industry has a direct bearing on more than a few chemical manufacturers. The steady increase in demand for tufted (as distinguished from woven) rugs and carpets is today playing second fiddle to a more dramatic switch from cotton to viscose rayon in the tufted field.

This year's meteoric rise of viscose rayon usage in tufted floor covering dwarfs the percentage that it has maintained in recent years:

Viscose Rayon in Tufted Rugs and Carpets

1951	1-1½%
1952	2-2½%
1953	6-7%
1954	35-40%

The most immediate impact of rayon rug and carpet popularity on chemical manufacturers is in increased orders for viscose rayon raw materials such as carbon bisulfide, caustic soda, sulfuric acid, glucose, ammonia, soda ash. On the other hand, the swing from cotton to man-made viscose rayon will not have as great an effect on finishing chemical consumption as the major decline in carpet wool consumption that began in 1950.

Wool Worries: Last year, as in 1952, wool made up about 45% of

all the fiber weight (excluding backings) of woven and tufted carpeting made in the U.S. These data (see chart) are derived from a comprehensive study made by Du Pont's textile fibers department. The figures show a slight rebound for wool from its dismal showing of 35% in 1951—the year of record wool prices.

Wool began losing its peak position (more than 80% of rug and carpet fiber weight) when these two events coincided in 1950:

- Argentine wool* prices climbed to an average \$1.05/lb. from 1949's 54¢/lb. and 1947's mere 27¢/lb.

- Rug makers earnestly began pushing cotton broad carpeting into the consumer arena.

By March '51, Argentine wool at \$2.30/lb. was pricing itself out of the carpet market. Meanwhile, the fraction of cotton fiber by weight in all rugs and carpets had bounded to 47.7%. Compare that with the '49 level of 15.9% and 1950's 33.4%.

Chemical Turnabout: This supplementing of wool by cotton (now by viscose rayon) has shifted demand for certain finishing chemicals (CW, May 15, p. 99) used by the rug industry.

*Virtually all rug and carpet wool consumed in the U. S. is imported. From Argentina: last year, 47.2%; 57.5% in 1949, and 29.2% in 1951.

For example, as more cotton and viscose rayon displace wool in floor coverings, there's a concomitant decline in the use of acid dyes. That means less use, too, for such acids as acetic, formic (CW, Jan. 23, p. 89), hydroxyacetic.

At the same time, makers of after-treating agents (used to prevent bleeding of darker shades of light-fast direct dyes) will expect more sales going to dyers of man-made fibers and cotton than to dyers of straight wool fibers for rugs.

Still behind the scenes is the potential trend in the use of selected pigment colors in the solution dyeing of viscose rayon for carpeting.

Chemical stockers have already noted the trend to the extensive use of synthetic detergents in the scouring of yarns made from man-made fibers. Consequently, the rise in rayon rug output results in less use of soda ash and soap than is common among most mill men.

Likewise, man-made fibers have changed the requirements for spinning lubricants. Mill men will now purchase more of the new water-soluble surface-active agents to aid in the production of yarn. Reason: to reduce static electricity. That aid, however, appears less important for viscose rayon than for nylon, acetate

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rayon, and the newer hydrophobic fibers, such as Dacron and Orlon.

Viscose rayon carpet mills though, avoid using most fiber softeners, since the latter tend to collect dirt on the carpet fibers.

One chemical finishing treatment of wool rugs—mothproofing in the home—vanishes with the switch to cotton or man-made fibers. But another demand for chemicals will arise, says H. C. Ball, of the Tufted Textile Manufacturers Assn., as new chemical finishing treatments for dirt resistance and fiber resilience are improved.

Latex on the Floor: But it's after the carpet is made and a backing is added that a change of considerable import to chemical manufacturers takes place. Since the tufted carpeting is more flexible, the carpet mills will use more back sizing than on a woven one. Some say as much as 20% more rubber latex will be used per square yard of tufted carpet backing.

The 40% estimate of viscose rayon in tufted floor coverings reflects indirectly the expected continued popularity of cotton in scatter rugs and bath mats, which account for about half of the tufted industry output. In the broad tufted carpeting field, by contrast, some of the mills expect to use rayon in as much as 70-80% of their production. That's nearly a reversal in practice for some tufted companies that were consuming 75% cotton and only 25% viscose rayon two years ago.

Statistics on the highly competitive tufted carpet industry are not available. Probably not more than 3 million sq. yds. of tufted floor coverings—mostly for bath mats and scatter rugs—were manufactured before World War II. Tufted carpets did not swing into quantity production until about 1949. They were nearly all cotton at that time.

William Reynolds, of the Carpet Institute, New York, pinpoints woven output regularly. The Bureau of the Census surveyed tufted output for 1951, '52, and half of '53, and the institute's estimates fill in the rest of the tufted data:

	U.S. Carpet and Rug Production	
	Woven	Tufted
	(million sq. yds.)	
1951	60.6	21.1
1952	62.1	29.6
1953	66.8	35.0
1954	60-62	40-45

But the competition among the rug fibers is by no means unidirectional in favor of viscose rayon; it's more likely that the fiber competition

will constitute a three-ring circus.

Actually, wool has made a comeback in the carpet industry since 1951. Last year, woven carpet mills included man-made fibers to the extent of 35% of their blended yardage, but that figure was down from the 42-43% of yardage in '51 (about 95% of the man-made fibers in woven carpet is viscose rayon).

Woven wool carpeting output, based on the first four months' data, may sag to 60-62 million sq. yds. this year. On top of this decline there is some likelihood that wool consumption in carpets—relative to cotton and man-made fibers—may lose several percentage points during the next five years. That's a strong possibility if the forward drive of cotton- and rayon-consuming tufted carpet production continues.

Basic Fiber: Nonetheless, carpet manufacturers admit that tufted materials can't duplicate the multi-colored effects, designs, and sculptured surfaces of woven wool and wool-blend materials.

Rayon people are just as quick to cite advantages of their floor coverings: it's much more resilient than cotton (both selling for about 33-34¢/lb. for staple), mats down less, is smoother, more soil resistant. Besides, 16-18 yds. of tufted material can be produced in the time that woven mills turn out one yard.

The shift from wool to cotton and rayon, and the zoom this year to viscose rayon, adds up to this: there has already been, and will continue to be, some shifting around of textile chemicals on rug makers' shelves.

Seven for Glycol

The light and heat of the summer sun dispel for most of us thoughts of the blustery winds and frigid weather of winter. But to the antifreeze industry, this is the time for advertency. Reason: canning for the upcoming cold months is going on right now; and suppliers of both methanol (for nonpermanent type) and ethylene glycol (permanent) are earmarking a good portion of current output for the antifreeze trade.

It's the reason, too, why producers, especially those turning out the glycol, are evincing piquant interest in the recent news that Wyandotte Chemicals is hitting the market with high-purity ethylene and diethylene glycols.

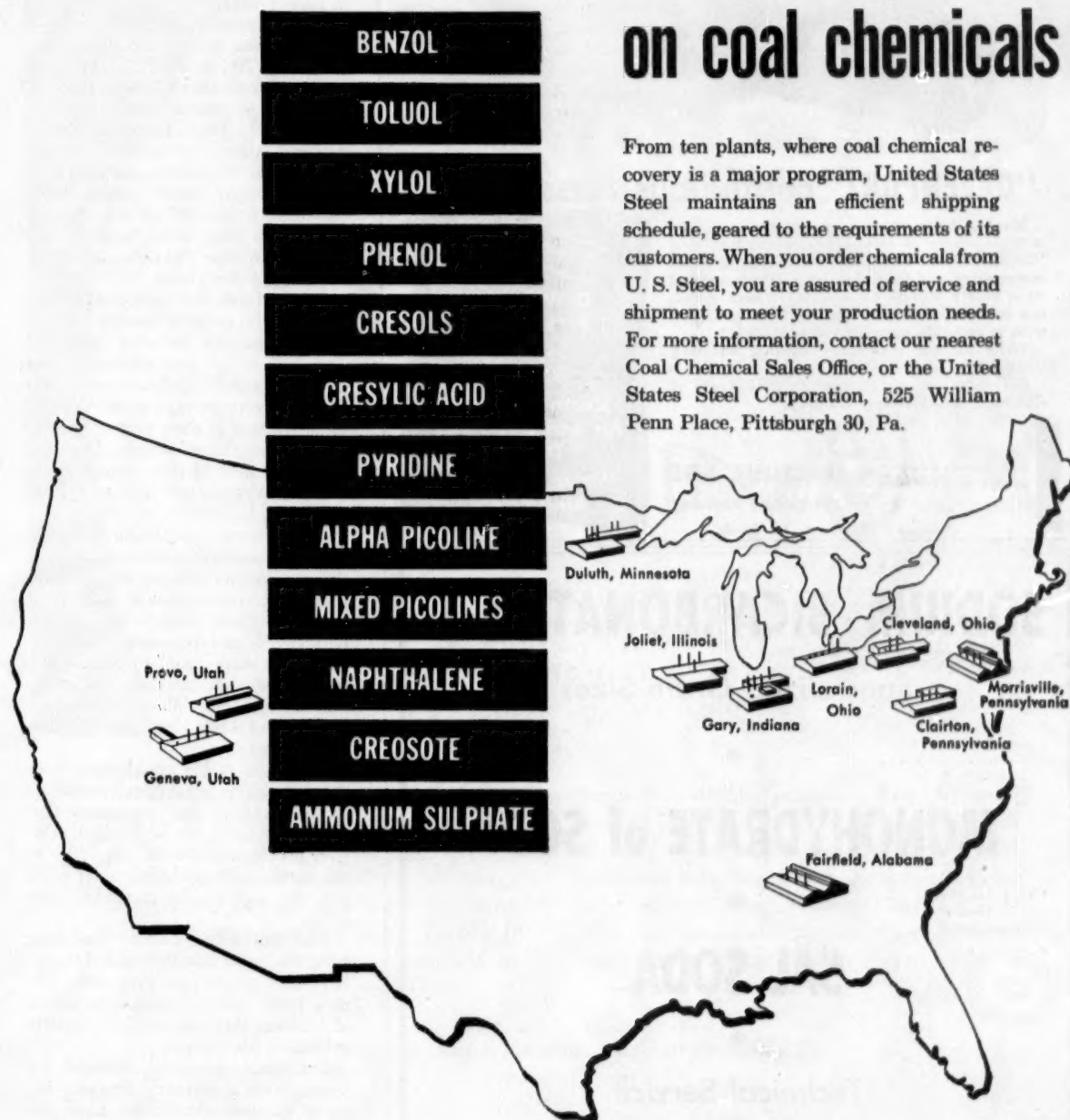
Wyandotte, of course, is no neophyte in the glycol arena, has, in fact, been in the business (at Wyandotte, Mich.) since 1948. Until lately, though, production has centered on an ethylene glycol-propylene glycol

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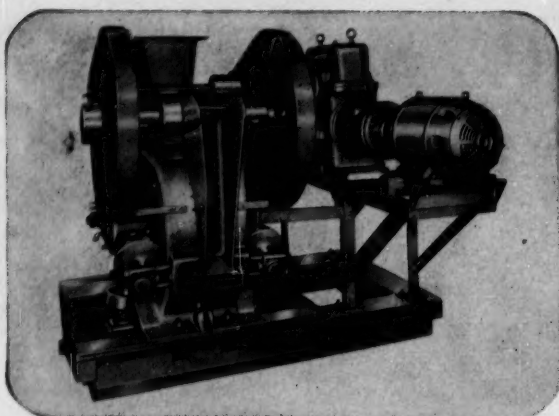
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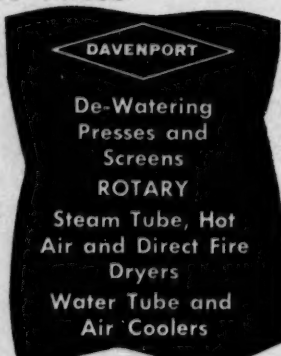
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mixture — approximately 80% : 20% ratio—suitable for antifreeze but not adaptable to most other industrial uses.

The company's moderate modifications* in manufacturing methods* thus augments output of pure (98-99½%) ethylene glycol, hones competition to a keener edge.

At the moment, Carbide and Carbon, pioneer in ethylene glycol since the early '20s, is still No. 1 producer, accounts for somewhat more than half of total U.S. production.

Dow, Du Pont, Jefferson, Mathieson and Allied's Nitrogen Division, in addition to Wyandotte, round out the seven-company roster, which last year produced a near-625 million lbs., and which this year will probably boost the level to over 700 million.

Much of the glycol, however, does not funnel into the open market, particularly the material headed for antifreeze use. An industry appraisal: Du Pont is the sole all-captive consumer; Carbide, Jefferson, and Mathieson divert perhaps more than 75% of production to their own or to other national antifreeze brands; Dow and Allied sell most of their output on the market; Wyandotte is the only 100% merchant.

There's some speculation as to why the latter company decided to abandon its solitary role as an ethylene-propylene mixture maker, move with the pure-glycol crowd. The reason, basically, is ambition—ambition to expand into more profitable, more promising industrial markets like cellophane, synthetic fibers, detergents, synthetic rubber, explosives, adhesives, resins.

(A minor factor could have been this fact: a few states have regulations requiring that the permanent-type antifreeze must, to be labeled ethylene glycol, contain at least 90% of the material. Wyandotte's older product was shy of the mark by some 10%.)

The antifreeze market has long been the major ethylene glycol outlet, but other glycol uses may well tally to a hefty 250-300-million-lb. chunk of business this year—and Wyandotte is bidding for a share.

But since industrial demand for most glycols is currently dragging because summer shutdowns have depressed activity in consuming industries, chances are that Wyandotte's initiation into the high-purity glycol fraternity won't make its full impact until the temperature is likewise depressed next winter.

* Essentially revolving around the installation of a low-temperature distillation column, which removes the propylene gases before the chlorhydrin and hydration stage.



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August 7, 1954 • Chemical Week



POTABLE PITCH: Farmers and makers will benefit from new pipe standards.

Open Valve for Plastic Pipe

Whenever any question of health is involved, a new product struggles through an uphill fight for acceptance. Hence, as a possible sanitary-use material, plastic piping sales have been hampered to date. They have also been clogged, to some extent, by misapplication and lack of standardization.

Last week, however, polyethylene pipe producers got a glimpse of unclogged pipe sales. Both standardization and health requirement blocks appeared about to be removed.

New Specs: After red-taping through the "proposal for standards" and "proposal adjustment" periods, the Commodity Standards Div. of the Dept. of Commerce began polling pipe extruders for formal approval of a polyethylene pipe standard.

The proposal sets specifications for inside diameter, wall thickness and weight for 10 pipe sizes ranging from half-inch to six inches nominal inside diameter. Acceptance of standards—and it's a foregone conclusion that they'll be o.k'd—will add this big selling point to polyethylene pipe:

Potential users can plan in terms of standard units, can be assured of ready availability from more than one supply source.

More to Come: On the way, too,

are standards for three other plastic piping materials. By the end of September, standard-acceptance forms for cellulose acetate butyrate, polystyrene, and polyvinyl chloride will be circulating. As in the case of polyethylene, approval's a certainty inasmuch as industry and the Society of the Plastics Industry originally asked for the standards. A standard is established after producers accounting for 65% of production accept it, and there's no active opposition.

Like 196 others, the polyethylene standard will be voluntary, and pipe extruders won't be forced to use it. The Dept. of Commerce has no regulatory power over the voluntary specification codes, but should a manufacturer claim compliance with standards while not observing them, the Federal Trade Commission and local law bodies could take action. The grounds: false and misleading advertising. Normally, however, action follows only in instances of flagrant, intentional misrepresentation.

But judging from past history, producers find it's good business to standardize, for many buyers order on that basis. Too, promulgation of previous standards (vinyl film, melamine tableware, polystyrene wall tile) have had

a healthy effect on the trade.

Provision for revising the standard is part of the Commerce Division's procedure. At the time a standard is established, the Commerce Division appoints a revision committee to keep it up to date. Generally, revision is a much easier process than formulating the basic code.

Already, work for the polyethylene pipe committee is in the offing. Last December, the SPI initiated a comprehensive engineering evaluation program at Battelle Memorial Institute, Columbus, O. Objective: to establish test procedures for bursting strength, working pressures, load serviceability, and related factors. Battelle, also researching methods on the other pipe materials the SPI seeks standards for, expects to complete work in 18 months.

Clean Bill: Researching for a related, though different, end is the National Sanitation Foundation at the University of Michigan. The aim at Ann Arbor: to prove that plastic pipe is nontoxic and does not flavor or aromatize water. Unknown toxicity has been the bottleneck in the development of rural potable water supply systems. State health departments, lacking data, have been leery of giving approval. But with facts now emerging, the go-ahead for the farm market is at hand.

Now well along after two years of study, the tests reveal that water circulated through plastic pipe systems caused no ill effects on rats. And no evidence of taste or odor extraction by the water has come to light.

Last fortnight, at an American Water Works Assn. meeting in Seattle, Walter Tiedeman,* an authority on sanitation, predicted that polyethylene and several other plastics will readily clear the health requirement hurdle.

With toxicity doubts about to be volatilized and standards on their way, exploitation of the enticingly profitable but as yet unipiped farm market is a winning wager. Chief selling point for the rustic consumer: the ease with which polyethylene piping can be installed. Water systems can be piped in much the same fashion as electric cable is laid.

The fair wind for pipe plastic comes none too soon. For by the end of the year, polyethylene makers from six new plants will be scrapping fiercely for any and all markets they can get.

* Director of the Seattle Testing Laboratories, an affiliate of the National Sanitation Foundation.

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Growing Concern Over Future Markets:

Chemical industry is pushing market research manpower to an all-time high

• CW's estimate of all chemical market researchers (in-company plus consultants)

1951

600

1954

975

Market Research Hits Peak

Chemical market research consultants have never had it so good. That's one conclusion immediately obvious from CW's just-finished roundup of the field. From Boston to Washington to California—all concur that their business is soaring mightily. Increases of 200% since 1951 are common, one is up a thumping 500%. And one-man operations, too, have more clients than they can handle.

This trend is in tune with the steady gain in numbers of chemical market researchers. In 1951, the Chemical Market Research Assn. could count 200 members (including consultants and "inside" company researchers). Now the ranks stand at 325. Currently, CW pegs the total number in chemical market research at about 1,000, compared with 600 three years ago. Using one widely accepted figure of \$20,000 expenditure per man, this year industry will spend some \$20 million on chemical market research against the approximate \$12 million spent in 1951.

The reasons for this surge to consultants aren't hard to pin down. Chemical companies, scrambling to maintain high sales volumes, are racing to product diversification. But when a company diversifies, the chances are that it doesn't have enough people on hand who have the requisite know-how. One solution, adding the "right" people, can take time—time that may not exist if the opportunity is to be exploited. And, once the venture is in stride, the staff is oversized. Most logical answer, for many a company: the consultant.

Why Consult? Most important, the consultant has the training and the knowledge in the specific diversification area that the company's staff hasn't acquired. This is particularly true of nonchemical companies plunging into the chemical field. And of all the reasons for hiring a consultant, the most cogent is probably his fund of special knowledge.

Vital, too, is the objective appraisal of a project an outsider can offer. He is free from the tugs and shoves of inside maneuvering and bias in pet projects, and can offer a check on the concern's own findings. But for the very reason that he's "outside," the consultant doesn't always know the inner strengths and weaknesses of his client. Resentment, too, from the client's staff sometimes complicates his work.

Too, the consultant can prove invaluable when a quick answer to a problem is needed and the company's staff is hard pressed. Market openings, often ephemeral, need to be exploited quickly. Here, the counselor can supplement the in-company staff, help the firm to cash in on opportunity.

Secrecy is another basic reason why a consultant sells his services. About the last thing any firm wants to do is parade its cards to its competitors, and some have observed that using their own staffs does just that. But a consultant, because he works independently, can readily conceal the identity of his client.

Top Problem: With diversification investment reaching into the millions,

these reasons for using consultants loom critical; it's a necessity that a company minimize risk by utilizing special knowledge, objective evaluation, and a Q. T. approach.

Right now, diversification is bringing flood-tide business to the consultant's door.

Typical answers to CW's query on reasons why:

"Several years ago many clients were looking for markets for new chemicals. Now, emphasis seems to be on selecting chemical products for new production ventures, . . . in effect, chemical diversification studies . . ."

"Increasing interest in product diversification . . . and also diversification into chemicals by companies not now engaged in production of chemical products."

"New products (already made by others) production is most important trend evident now."

Within the move to a broader base, the consultants claim diversification is spreading in three directions. The trends within the trend:

- Diversification through acquisition of another firm. Often the easiest way, this can also clip taxes on high profits. By picking up a bankrupt firm, the company could pay for 90% of it from tax dollars by falling into a lower tax category. Strong a year ago, acquisition for tax savings is off a bit now.

- Bulk chemical producers branching into specialty lines. Although this has been going on for several years, recently the gait's brisker. Recent examples: American Potash's pickup of Eston Chemical ("fines"), and Mathieson's acquisition of Squibb



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(pharmaceutical manufacturers).

• Nonchemical concerns nosing in to chemical industry. Only recently, New York Shipbuilding Co. added Devoe and Raynolds (paints and varnishes) and W. R. Grace (fundamentally in shipping) has acquired several chemical firms, is currently buying Dewey and Almy (plastics).

Pushing the swing to diversification, point out the consultants, is the never-still nature of the industry itself. Processes can, and have, become obsolete before a plant even reaches production. And with research budgets everywhere at high levels, the process efficiency life of a chemical is pinched harder than ever. Adding to rapid obsolescence: dry-up of heavy war-economy demands.

Spreading a company's foundation over an expanse of operations markedly lessens the risk of lean stretches. For while one line may lose money, other interests will keep the sag out of the sales curve.

Diversification studies, while accounting for a goodly part of current consulting work, aren't the only object of attention. About the country, consultants discern these lesser but visible tendencies:

- Use of market research as a tool in the solution of wide-scope management problems as against routine data amassing.
- Invasion of Western markets by Eastern chemical companies.
- Appraisal of a firm's competitive position.

How much for Market Study? How much should a chemical company spend on market research? CW put that poser to the advisors of industry, came up with a host of differing responses. According to the consultant, it's all a function of the specific case. But variable as the expenditure can be, here's what they estimate:

- "... should spend between 0.1% to 1% of the cost of new investment on outside market research . . . in addition to work of their own staff."
- "... between 2 to 3% of the initial plant cost.
- "... about 10% of the budget devoted to development and pilot-plant work . . ."

Currently, one large consultant calculates the chemical industry's bill for market research (all) at 6.7% of all investigations, or about 0.1% of total sales. This is, coincidentally, the median figure reported by an American Management Assn.'s survey last year for all industry.

The AMA survey portended to some extent the vast rise in consultant activity. Of the 180-odd companies con-



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tacted, some 68% expected to up market investigation, 32% to increase the proportion of their sales dollar channeled to market study.

Some presagers indicate that the boom is at its peak, is now leveling off. But most consultants predict the plateau will be a long one, that especially in the period just ahead, chemical companies will continue to call in outside consultants in their struggle to strengthen their market position.

For your reference files: Calcium chloride "Peladow"—a 46-page booklet providing information about properties and applications to road dust laying, concrete curing, and dehumidifying. Dow Chemical Co., Midland, Mich.

• Vinyl chloride monomer—21-page booklet detailing technical data, storage, handling and applications. Coatings Tech. Service, Dow Chemical Co., Midland, Mich.

• Ammonia—50-page booklet detailing physical data and suggested uses. Spencer Chemical Co., Kansas City, Mo.

• Carbowax methoxy polyethylene glycols—a leaflet providing technical data, shipping information and suggested uses in detergents, penetrators, and plasticizers. No. F-6736, Carbide and Carbon Chemicals Co., New York.

• "Zeolex 23"—a white reinforcing pigment for rubber. Technical information and possible applications are described in a 20-p. brochure. J. M. Huber Corp., New York, N. Y.

• "Fungus-Resistant Vinyl Plastisols"—a technical bulletin providing physical data and potential uses. Scientific Oil Compounding Co., Inc., Chicago, Ill.

Sources of Chemicals: Crystalline dihydrostreptomycin sulfate and combined streptomycin dihydrostreptomycin sulfate are now commercially available from Lederle Laboratories Div., American Cyanamid Co.

• Crystalline ammonium thiocyanate is now being produced by the Halby Chemical Co., Wilmington, Del.

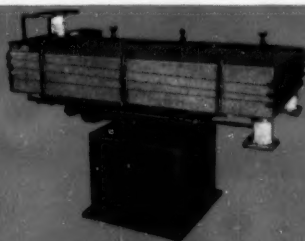
• Silicon carbide deoxidizers for use in electric and open-hearth furnaces are now being marketed by the Electro Refractories & Abrasive Corp., Buffalo, N.Y.

• Perchloromethyl Mercaptan (PMM) is now being produced in commercial quantities by the Stauffer Chemical Co., New York, N.Y. Company spokesmen assert that it may find uses in lubricants, rubber additives, and dyes.

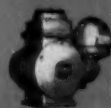
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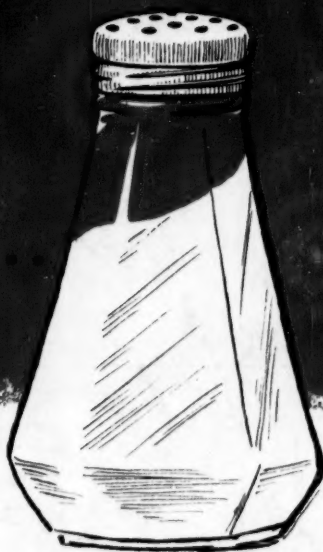


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